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ABSTRACT

The impact of the Boston-area colleges and universities on the local economy was studied and major findings include the following: (1) Boston postsecondary education is a $1.3 billion annual enterprise, most of which money is spent in the Boston area. (2) Sources outside metropolitan Boston account for more than half of these expenditures. The education community is, in effect, a major local "export" industry, bringing prosperity to the local economy. (3) The 65 colleges and universities have combined purchases (excluding construction) that total $317 million per year, 75 percent of which is in the metropolitan Boston area. (4) Purchases by faculty, staff, and students of the 65 schools amount to $493 million per year. (5) The 65 colleges and universities in the Boston area employ 40,000 or about 37 percent of the total employed in educational services, which is 3.5 percent of the total employment. (Author/LBH)

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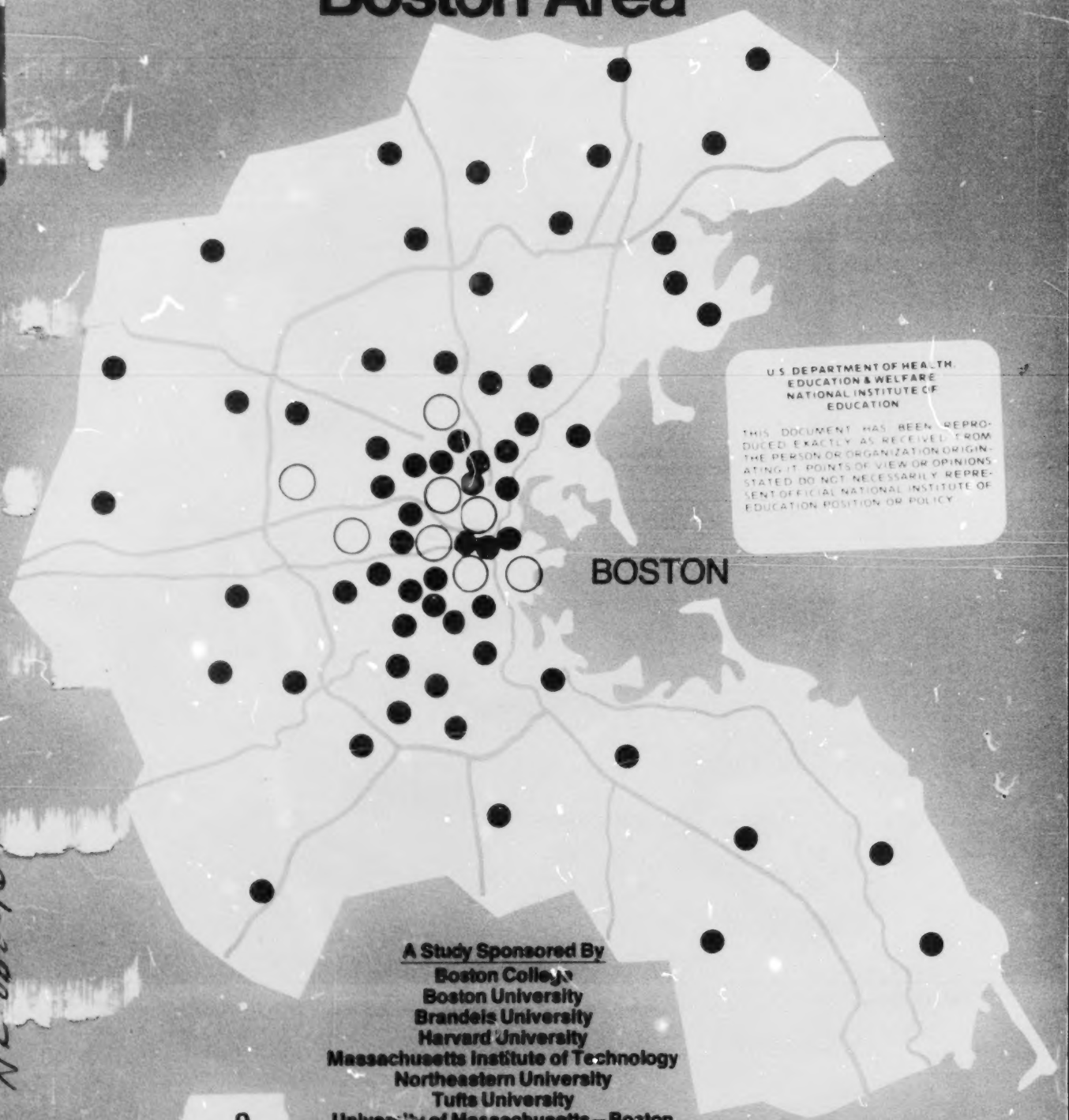
the Economic Impact of Colleges & Universities on the Boston Area



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A Study Sponsored By
Boston College
Boston University
Brandeis University
Harvard University
Massachusetts Institute of Technology
Northeastern University
Tufts University
University of Massachusetts – Boston

THE IMPACT OF BOSTON-AREA COLLEGES AND UNIVERSITIES ON THE LOCAL ECONOMY

Prepared by the SDL Systems Research Group

February, 1974

Boston New York Washington Toronto Ottawa Montreal

For additional copies of this report,
or of its Summary version, please
contact Charles Smith, Vice President,
Boston University, 881 Commonwealth Avenue,
Boston, Massachusetts 02215.
617/353-4550

NORTHEASTERN UNIVERSITY
360 HUNTINGTON AVENUE
BOSTON, MASSACHUSETTS 02115

OFFICE OF THE PRESIDENT

October 19, 1972

Mr. George Mowbray
Director
Higher Education Systems
SDL Systems Research Group
111 Avenue Road
Toronto, Canada M5R 3J8

Dear Mr. Mowbray:

This letter will confirm our arrangements for you to make a study of the impact of the Boston-area colleges and universities on the local economy sponsored by the eight major universities of this area--Boston College, Boston University, Brandeis University, Harvard University, Massachusetts Institute of Technology, Northeastern University, Tufts University, and University of Massachusetts in Boston. We feel that it is important for you as an outside organization to carefully examine our institutions from this viewpoint and report back to us.

Higher education has become widely accepted in our society as a source of cultural and social benefits; much of Boston's vitality can be traced to its long involvement in higher education.

Yet a college or university is more than just an educational institution. It is also a major employer, builder, purchaser, financial agency, and in general a contributor to the economy of its local community and the surrounding region.

In Boston, as elsewhere, the inflation of recent years has squeezed the budgets of many institutions, including those in education. Throughout the same period, municipal finances have also been strained by rising needs and restricted revenues. Questions thus arise from time

to time as to whether higher education is carrying its proper weight in fiscal terms. Under current conditions, property tax exemptions tend to become more highly visible as a form of public support education.

On the other hand, the immediate economic contributions which colleges and universities make to the communite are not widely recognized. For this reason we are commissioning you to this study. Representatives from each of our institutions will provide you with the information which you need. This data gathering will be coordinated by Charles W. Smith, Vice President for Finance at Boston University, and you will report from time to time to a committee of the presidents.

We hope that the entire report will be ready for release early in 1974.

Cordially yours,

Asa S. Knowles
President

ASK:gdo

February 26, 1974

To:

J. Donald Monan, S. J.
Boston College

Jerome B. Wiesner
Massachusetts Institute of Technology

John R. Silber
Boston University

Asa S. Knowles
Northeastern University

Marver H. Bernstein
Brandeis University

Burton C. Hallowell
Tufts University

Derek C. Bok
Harvard University

Robert C. Wood
University of Massachusetts

Gentlemen:

The SDL Systems Research Group has the honor to transmit to you this study of the impact of colleges and universities on the economy of metropolitan Boston. It is being formally transmitted to you for release to the public, in your capacity as its committee of sponsoring university presidents.

As the work on this project progressed, a few major observations gradually came into focus.

The most significant finding of the study is the importance of higher education's monetary expenditures in the economy of Greater Boston. Sixty-five colleges and universities in metropolitan Boston, through their daily operations, students, visitors, and construction programs, create annual outlays of $1.3 billion. More than half of this money comes from sources outside of the Boston area, and most of it is paid out to residents and business firms within the area. This kind of economic activity is essential for regional prosperity. Business within a region must serve outside customers in order to earn the money that brings prosperity within the region.

111 Avenue Road
Toronto, Ontario, Canada M5R 3J8
Telephone: (416) 964-8411

Education has become one of the largest, if not the largest, industries in the Boston area, and this has proved to be very profitable to other Boston industries. The expenditures by the universities themselves and by their faculties, students, and guests have become vital elements in the regional economy.

Despite the many economic benefits for the community at large, the governments of the host cities do not receive any substantial fiscal benefits from the income generated by the colleges and universities. This is because the prevailing tax structure makes the cities heavily dependent upon real estate taxes, and the money flows generated by higher education do not yield commensurately increased revenue for the host city as community income increases. Because of the state income tax and other state taxes, Massachusetts, rather than the City of Boston and other cities, is the primary beneficiary from the college and university salary payments and business purchases. This situation can be cited as an argument for state aid to the cities to compensate them for the property tax exemptions granted to colleges and universities, which make up one of the largest industries in the community.

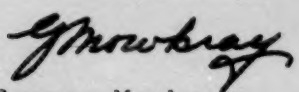
We would also like to acknowledge the help of many people in the compilation of the facts that underly the study, which is for the most part based on original research in the form of eighteen surveys of faculty, staff, students, and visitors. We thank the respondents for their cooperation.

Under the chairmanship of Charles W. Smith, Vice President for Finance of Boston University, a steering committee supported the work. Members were: John G. Bolin, John Danahy, and John R. Smith, Boston College; Lester G. Loomis and Laurence J. Higgins, Brandeis University; Celeste Arden and David Davis, Harvard University; John A. Currie, Paul V. Cusick, and Walter L. Milne, Massachusetts Institute of Technology; Loring M. Thompson, Northeastern University; John A. Dunn, Jr. and Peter Fitzrandolph, Tufts University; Philip Gartenberg, Franklyn W. Phillips, and Joan C. Tonn, The University of Massachusetts. Virginia L. Tierney represented Boston University and acted as chief project coordinator for the committee. Frances P. Doonan was our secretary.

Specific contributions of other individuals to the project are noted in parts of the report. But the contribution to data processing and interpretation made by Sylvia Fleisch of Boston University's Computing Center deserves special acknowledgement.

Although this study was sponsored by the universities, responsibility for its objectivity and accuracy rests solely with the SDL Systems Research Group. Consultants of that group who assisted included Michele McGinn and Steve Russell; their assistance, on both technical matters and matters of judgment, is here acknowledged. The report has been edited by Florence Trefethen of Lexington, Massachusetts.

Yours sincerely,



George Mowbray
Project Director

CONTENTS

I	OVERVIEW	2
II	UNIVERSITY OPERATING REVENUES	11
III	UNIVERSITY OPERATING EXPENDITURES	14
IV	THE IMPACT OF INSTITUTIONAL PURCHASES	16
V	THE IMPACT OF UNIVERSITY CONSTRUCTION	20
VI	UNIVERSITIES AND THE FINANCIAL COMMUNITY	22
VII	EXPENDITURES BY FACULTY AND STAFF	25
VIII	EXPENDITURES BY STUDENTS	29
IX	EXPENDITURES BY CAMPUS VISITORS	34
X	TAX EXEMPTIONS AND OFFSETS	39
XI	THE ECONOMIC IMPACT OF THE OTHER 57 METRO BOSTON COLLEGES AND UNIVERSITIES	48
	Appendix A A History of the Boston Educational Community	50
	Appendix B Methodology	84

I

OVERVIEW

The 65 colleges and universities in the official metro Boston area are directly responsible for about $1.3 billion in annual expenditures. On the basis of surveys conducted independently as part of this economic impact study, Boston emerges as the leading center of knowledge in The United States -- with more academically based employment and more students in relation to population than any other major metropolitan area.

The analysis[1] of this report is primarily focused on the cash-flow impact of eight universities -- Boston College, Boston University, Brandeis, Harvard, M.I.T., Northeastern, Tufts, and the University of Massachusetts at Boston. It is supplemented with a more general review of the other 57 institutions of higher learning in the area. The area of impact is The Standard Metropolitan Statistical Area as defined by the U.S. Census.

While universities are not often thought of as businesses, they have a remarkable impact on their local and state economies -- as employers, purchasers, drawing points for students and visitors, and developers who spend sums on construction. They and their faculties, staffs, and students are an integral part of the area's financial dynamics -- holding cash, borrowing and lending money, and paying taxes. As tax-exempt institutions, however, they do not have to pay local property taxes, a privilege granted by state legislation for the benefit of the entire state, but representing fiscal support from local taxpayers.

Hard pressed municipalities are naturally tempted to try to secure payments in lieu of taxes from educational institutions as some compensation for the revenues lost to local governments. But the principal fiscal element in the situation is probably the taxes the Commonwealth saves by not having to underwrite a major postsecondary educational sector. This consideration has encouraged numerous

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[1]The study's methodology was based in part on John Caffrey and Herbert H. Isaacs, Estimating the Impact of a College or University on the Local Economy (Washington, American Council on Education, 1971). See Appendix B for further details on the aspects of university impact covered in this study, and for other methodological issues.

suggestions of ways in which the Commonwealth might spread the impact of municipal tax exemptions more equitably, perhaps through some form of compensation to those municipalities most directly affected.

The direct flows of funds associated with the colleges and universities of metro Boston, the main subject of this study, are only part of the total impact force. These institutions have consistently and conspicuously been a major thrust in the intellectual and socio-economic process in New England. The Boston knowledge center has not only provided thousands of jobs in education, but has been the source of many more through the creativity of its faculty and graduates. One need only look at Route 128 with its developments related to the application of engineering science, to universities' contributions to health care delivery and research, and their role in music and the arts. The educational community has played a leading role in the spectacular growth of service industries and high-technology business in New England, thereby helping to offset the long-term decline in the region's manufacturing sector.

A. BOSTON POSTSECONDARY EDUCATION IS A $1.3 BILLION ANNUAL ENTERPRISE.

The 65 metro Boston colleges and universities, their employees, students, and visitors, together spend $1.3 billion a year -- most of it in the metro Boston area. (See Figure 1.) The data refer to the study year 1972.

1. A little over 69% of the $1.3 billion consists of the $897 million in institutional operating accounts, 2.9% of the $30.6 billion gross domestic product of the Commonwealth. (See Table 1.)

2. Students are an important economic factor, representing nearly 20% of the total university impact on the business of the area.

3. Visitors spend $20 million a year in metro Boston.

4. Construction outlays amount to $120 million a year at current levels.

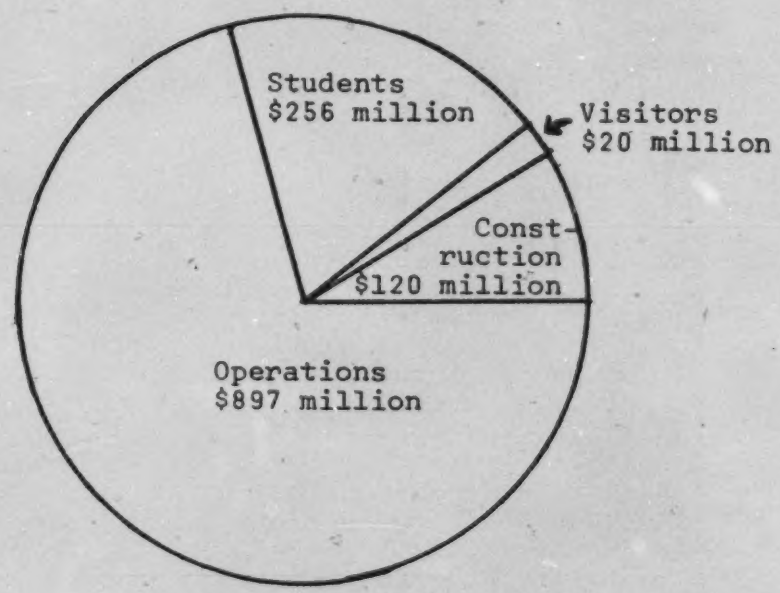
Table 1

METRO BOSTON COLLEGE AND UNIVERSITY EXPENDITURES, 1972
($ millions)

Expenditure Type	8 Universities	57 Other Local Colleges	Total for 65	%
Operations	$696.9	$200.0	$896.9	69.4
Students	155.6	100.0	255.6	19.8
Visitors	15.5	4.5	20.0	1.5
Construction	100.0	20.0	120.0	9.3
	$968.0	$324.5	$1,292.5	100.0

Figure 1

EXPENDITURES OF 65 METRO BOSTON COLLEGES AND UNIVERSITIES, 1972
TOTAL -- $1.3 BILLION



B. 51% OF EXPENDITURES ARE FUNDED FROM OUTSIDE THE BOSTON AREA.

A look into the "sources" of this billion dollar annual outlay, discloses that about 51% of it comes from outside the metro Boston area. The $656 million cash inflow makes the educational community, in effect, a major local "export" industry.[1] (See Table 2).

Table 2

METRO BOSTON EDUCATIONAL MONEY INFLOWS, 1972
($ millions)

Inflow of Funds for	8 Universities	57 Other Local Colleges	Total for 65
Operations	$385.2	$ 60.0	$445.2
Students	93.4	37.0	130.4
Visitors	15.5	4.5	20.0
Construction	50.0	10.0	60.0
	$544.1	$111.5	$655.6

1. Of the major universities' total operating revenues in 1972, 56% ($385 million) came from outside metro Boston. Most of the operating revenues came from out-of-state federal grants, student fees, and private gifts. The proportion is judged to be smaller for the other 57 institutions.

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[1]This view has been expressed before. The following is a quotation from the Federal Reserve Bank of Boston, New England Business Review, April 1965, p. 8. "In the long run it would appear that one of the keys to the state's economic growth is its education industry. Not only is it an export industry, but also an important source for the development of a highly trained labor force. Moreover, the presence of numbers of skilled engineers, research scientists, and able management consultants makes the intellectual climate attractive for highly skilled personnel from other regions as well as new firms." More recently, the Academy for Educational Development has recorded an analytic assumption that Massachusetts employment in service industries will advance from 71% to 75% of the total labor force between 1968 and 1980, as compared with a decline from 29% to 25% for employment in commodity-producing industries. See Higher Education in Massachusetts (Boston, Massachusetts Advisory Council on Education, June, 1973), p. 203.

2. In the eight universities, 60% of the students are non-local, many from out of state, and hence financed largely from non-local sources. The corresponding percentage of non-local students for the other institutions is 27%.

3. Visitors' expenditures are all compared on an out-of-area basis; they exclude any impact of visits by local residents.

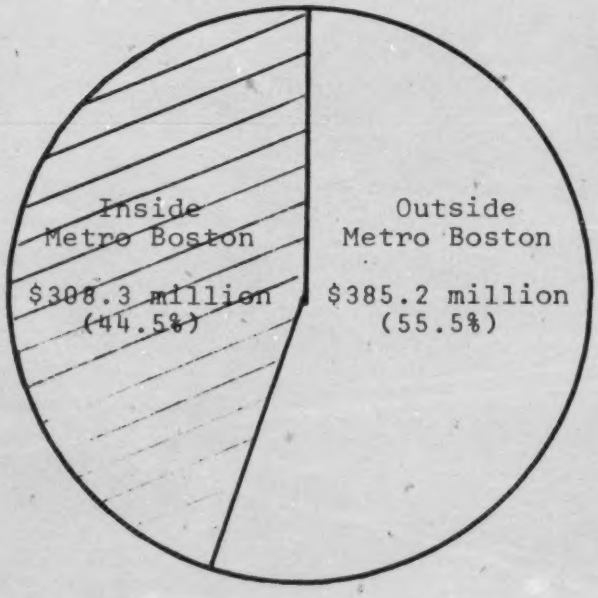
4. Construction funds have been allocated on the basis of 50% non-local funding. This is a conservative estimate, since the major universities (with the larger building programs) have 68% of their alumni living outside the metro area, half of them out of state.

Figure 2

INFLOW OF FUNDS TO BOSTON
THROUGH 8 MAJOR UNIVERSITIES, 1972

Revenues -- $693.5 million

From



Expenditures -- $696.9 million

To

C. METRO BOSTON'S POSTSECONDARY INSTITUTIONS GENERATE PURCHASES OF $317 MILLION A YEAR.

The 65 colleges and universities have combined purchases totaling $317 million a year -- 75% of it ($238 million) in the metro Boston area. (This total excludes construction.)

D. LOCAL FACULTY, STAFF, AND STUDENT PURCHASES TOTAL $493 MILLION ANNUALLY.

The combined purchases of the employees and students of the 65 schools approximate $493 million a year.

E. THE UNIVERSITIES AND OTHER EDUCATIONAL INSTITUTIONS TOGETHER ARE THE LARGEST EMPLOYERS IN THE GREATER BOSTON AREA.

The educational services sector is the largest in Boston (9.6% of the employed population), and represents a larger share of employment totals than in any other U.S. metro area, according to official Census data. As Table 3 indicates, the educational services sector outranks all others in the Boston area in terms of the number of jobs provided. Here nearly twice as many people are working in education as in the labor-intensive construction industry. Furthermore, the educational services sector creates approximately 20% more employment than its closest rivals, the health services sector (itself partly made up of university personnel) and the sector covering financial, insurance, and real estate establishments. The 40,000 employees of the 65 colleges and universities in the Boston area make up about 37% of the total employed in educational services. (See Figure 3.)

Table 3

COMPARISON OF EMPLOYMENT IN EDUCATIONAL SERVICES WITH OTHER ECONOMIC SECTORS - BOSTON SMSA, 1970

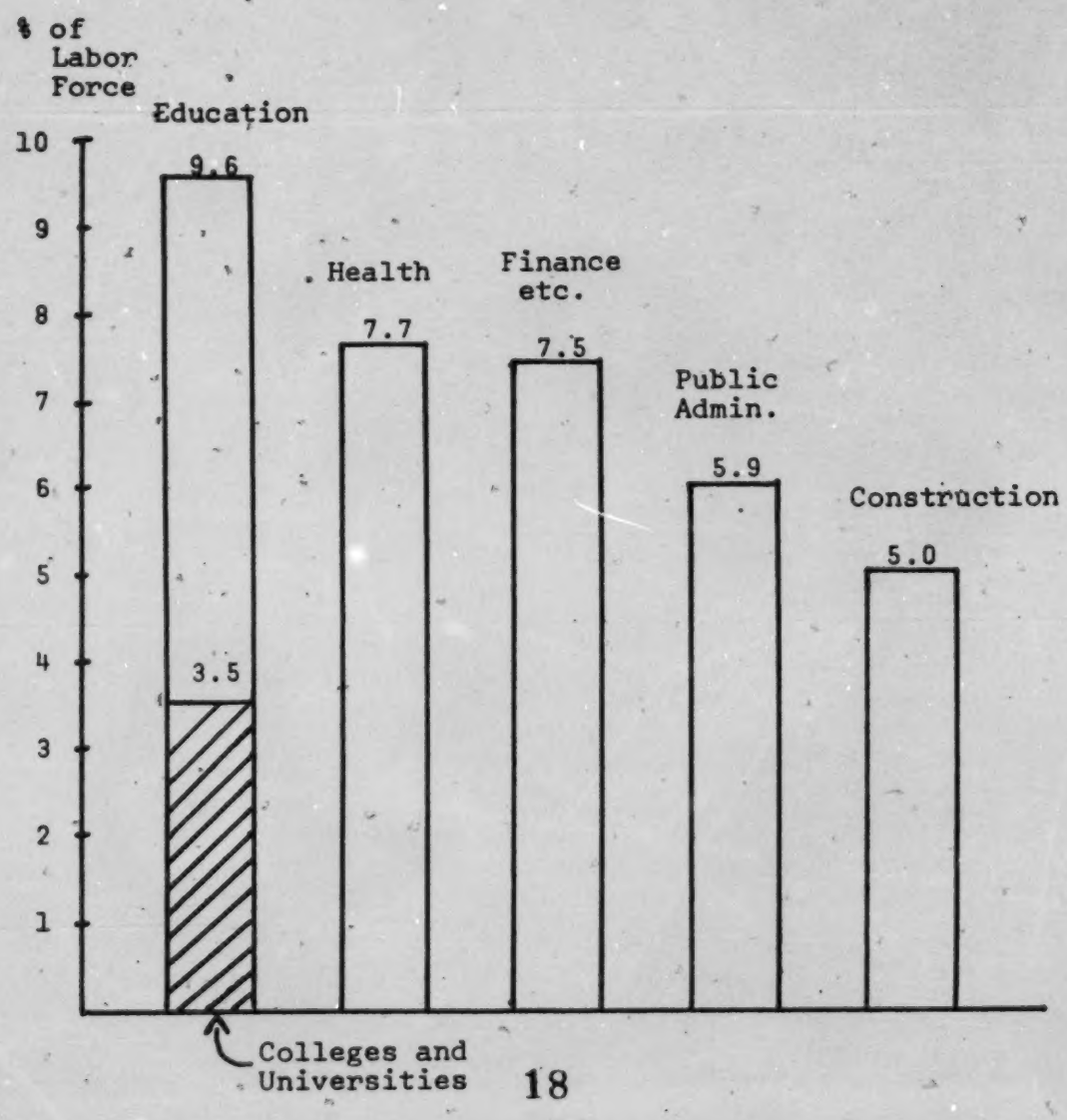
	Number	%
Educational services[1]	108,907	9.6
Construction	56,998	5.0
Metal industries and machinery	48,513	4.3
Electrical machinery, equipment & supplies	46,920	4.1
Motor vehicles and other transportation equipment	23,035	2.0
Other durable goods	35,133	3.1
Food and kindred products	15,004	1.3
Textile mill and other fabricated textile products	18,187	1.6
Printing, publishing and allied industries	23,600	2.1
Chemicals and allied products	8,141	0.7
Other non-durable goods	35,963	3.2
Transportation	37,158	3.3
Communications, utilities & sanitary services	37,759	3.3
Wholesale trade	54,623	4.8
Food, bakery and dairy stores	31,187	2.7
Eating and drinking places	35,256	3.1
General merchandise retailing	35,840	3.2
Motor vehicles retailing & service stations	15,765	1.4
Other retail trade	65,886	5.8
Finance, insurance & real estate	85,417	7.5
Business and repair services	41,457	3.6
Personal services	39,219	3.4
Health services[2]	87,267	7.7
Other professional & related services	68,004	6.0
Public administration	66,881	5.9
Other industries	14,304	1.3
Total	1,136,474	100.0

[1]Postsecondary institutions represent 40,000, or 37%, of this total. In themselves they amount to 3.5% of 1,136,474 total employment.

[2]Universities are heavily represented in health services employment.

Figure 3

METRO BOSTON LABOR FORCE IN
SELECTED INDUSTRIES, 1970

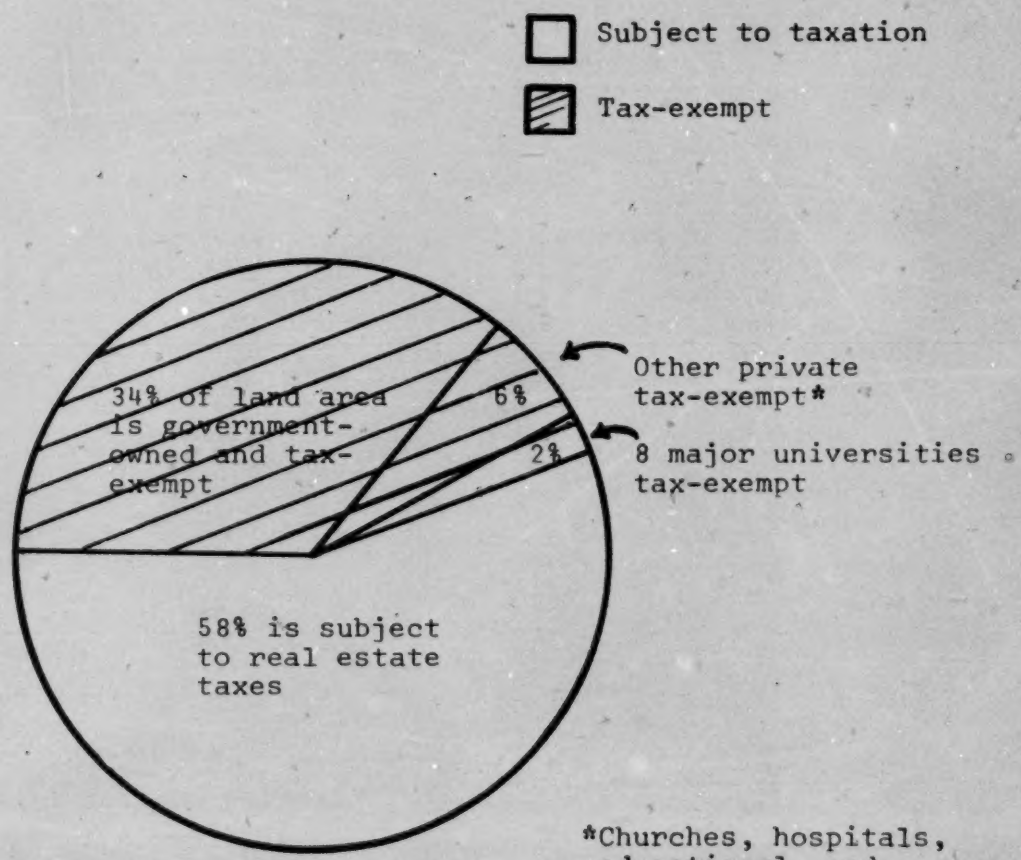


F. BOSTON'S EIGHT MAJOR UNIVERSITIES OWN ONLY A SMALL PART OF BOSTON'S LAND AREA.

The eight major universities own only 2% of all land in Boston. This is a small part of the total and a small part of the 42% of Boston land that is tax-exempt. As Figure 4 indicates, the eight universities' land area holdings in Boston are but 1/17 as extensive as government-owned tax-exempt land, which accounts for 34% of Boston's land area.

Figure 4

THE TAX BASE OF LAND IN THE CITY OF BOSTON



II

UNIVERSITY OPERATING REVENUES

SUMMARY: Of the eight universities sponsoring this study, only one -- The University of Massachusetts -- is a public institution receiving state operating grants. The others are private institutions, relying mainly on varying proportions of student tuitions, gifts, endowments and federal research grants for their funding. Of the $694 million in operating revenues all eight universities received in 1972, 72.4% ($502 million) came from private sources. Furthermore, 56% ($385 million) of all operating revenues came from outside metro Boston.

A. 72.4% OF OPERATING REVENUE COMES FROM PRIVATE SOURCES.

Table 4 summarizes the income sources of the eight major universities for the study year (1972).[1]

Table 4

TOTAL UNIVERSITY REVENUE, 1972

	Revenue ($ million)	% Total
Private Sources		
Student tuition and fees	185.6	26.8
Private gifts & endowment	129.0	18.6
Service programs	73.4	10.6
Auxiliary enterprises	57.9	8.3
Other sources[2]	56.2	8.1
Subtotal private	(502.1)	(72.4)
Government Sources		
Federal	(178.7)	(25.7)
Direct cost of projects	161.9	23.3
Student aid	16.8	2.4
Commonwealth of Mass.	(12.2)	(1.9)
Operating grant to U. Mass.	9.6	1.4
Direct cost of projects	2.1	0.3
Student aid (understated)[3]	0.5	0.1
Local governments	0.5	0.1
Subtotal government	(191.4)	(27.6)
Total operating revenue	$693.5	100.0

[1]The information for this table was taken from the federal

11.

Several of these data merit special attention:

1. Slightly more than one-quarter (26.8%) of total revenue comes from students -- about the same as from the research and other funds from federal agencies.

2. Private gifts and income from endowments are also a substantial source of income (18.6%).

3. Although details are not shown in Table 4 for each institution, the federal research funds and endowment income figures are heavily concentrated on Harvard and M.I.T. Conversely, the share of student fees in the revenue pattern is much higher, averaging 51.8%, for the six other institutions.

4. The total "private" revenue contribution is stated in the table as $502.1 million, or 72.4% of the total revenues of the eight universities in 1972. As footnote 2 indicates, however, this is a slight overestimate because the "other sources" figure includes an amount for the recovery of indirect costs on government-sponsored research projects and other such programs.

5. Government sources of revenue total $191.4 million, plus the amount referred to above, or something in excess of 27.6% of total university revenue. This money, except for the operating grant of $9.6 million to the University of Massachusetts, is made up largely of federal government expenditures on sponsored research projects, not subsidization of ordinary instructional processes in the institutions. The other significant government item is student aid, totaling more than $20 million in 1972.

(continued from page 11)

HEGIS (Higher Education General Information Survey) report on university finances.

[2]"Other sources" includes government funds categorized as recovery of indirect (overhead) costs on publicly sponsored programs ($37 million).

[3]Student aid excludes $5.1 million in scholarships and grants by the Commonwealth to needy or handicapped students.

B. 56% OF THE MAJOR UNIVERSITIES' REVENUES COME FROM OUTSIDE METRO BOSTON: $385 MILLION IN 1972.

A significant share of university private and public revenues, as shown in Table 5, comes from sources outside metro Boston. Together, these outside sources total $385 million and account for 55.5% of university operating revenue. The percentages note the bases of the allocation, which, though not thoroughly precise, represent a reasonable set of judgments.

Table 5

ESTIMATED UNIVERSITY REVENUE FROM SOURCES OUTSIDE METRO BOSTON, 1972

Sources	From Outside Metro Boston ($ millions)	% of Revenue Item
Private Sources		
Student tuition and fees	111.4	60
Private gifts & endowment	64.5	50
Other sources	28.1	50
Subtotal private	(204.0)	(29.4)
Government Sources		
Federal	175.1	98
Commonwealth of Mass.	6.1	50
Subtotal government	(181.2)	(26.1)
Total from outside sources	$385.2	55.5

III

UNIVERSITY OPERATING EXPENDITURES

SUMMARY: The eight universities sponsoring this study spent a total of $696,861,000 in 1972 to support their educational missions, a large operation by business standards. According to official reports submitted to the U.S. Office of Education, 73% of this total went into education and general expenditures, that is, towards carrying on the universities' principal functions.

A. THE MAJOR UNIVERSITIES SPEND $697 MILLION PER YEAR ON EDUCATION AND RELATED AUXILIARY ENTERPRISES.

For the study year 1972, the eight universities' expenditures of $696,861,000 were allocated as shown in Table 6.

Table 6

UNIVERSITY EXPENDITURES, 1972
($ Millions)

Category		Amount	% Total
Education and general		$510.5	73.3
Instruction & departmental research	393.9		(56.6)
Maintenance & operations	41.3		(5.9)
Other expenditures	75.3		(10.8)
Student aid		55.8	8.0
Major service programs		68.9	9.9
Auxiliary enterprises		61.6	8.8
Housing & food	38.3		(5.5)
Other	23.3		(3.3)
		$696.8	100.0

B. INSTRUCTION, DEPARTMENTAL RESEARCH, AND OPERATIONS DIRECTLY SUPPORTING THOSE ACTIVITIES ACCOUNT FOR NEARLY THREE-QUARTERS OF ALL OPERATING EXPENDITURES.

The $511 million spent for education and general expenditures in 1972 represents 73.3% of total operating expenditures. $394 million (56%) was spent for instruction and departmental research, and $41 million for the maintenance and operation of the physical plant and other expenses to house those activities.

C. 8% OF TOTAL OPERATING EXPENDITURES IS ALLOCATED TO STUDENT AID.

In 1972, the eight universities spent $55.8 million on student aid, part of it supplied by the institutions themselves.

D. THE UNIVERSITIES SPEND $62 MILLION ON AUXILIARY ENTERPRISES.

Food, housing, and other auxiliary enterprises accounted for $61.6 million in 1972, 9% of total operating expenditures. This kind of expenditure is offset, for the most part, by revenues from those enterprises. The figure represents a significant demand on the local economy for both supplies and labor.

IV

THE IMPACT OF INSTITUTIONAL PURCHASES

SUMMARY: Three of every four dollars spent in purchases by the eight major universities are spent in the City of Boston or in the surrounding municipalities of the SMSA. These metro Boston purchases, in fact, represent 30¢ of every dollar of the universities' annual operating expenditures and total $211 million a year at 1972 rates. There is a wide variation among the several kinds of purchases in respect to their locale of origin, but, in the aggregate, university buying is heavily concentrated in the Boston area.

A. THE MAJOR UNIVERSITIES' PURCHASES IN THE BOSTON AREA TOTAL $211 MILLION ANNUALLY, 75% OF ALL THEIR PURCHASES.

Out of their total operating expenditures of $697 million, the major universities spend $282 million (42%) on purchases of supplies, materials, and equipment for current operations. This excludes any expenditures on their construction programs on capital account. Of the $282 million in purchases in 1972, $211 million (75%) was spent in the metro Boston area. In other words, no less than 30¢ on every dollar of university operating expenditures goes directly into the Boston metro area.

Table 7

UNIVERSITY PURCHASES, 1972

Area of Purchases	Amount ($ Millions)	% Total
City of Boston	$ 72.3	25.6
Other SMSA localities	138.8	49.2
Other parts of Mass.	13.2	4.7
Out of state	57.9	20.5
	$282.2	100.0

B. THE HIGH VOLUME OF UNIVERSITY PURCHASES IN METRO BOSTON IS CONCENTRATED WITHIN CERTAIN MAJOR PURCHASE CATEGORIES.

Equipment, supplies, maintenance, and utilities account for $151 million (54%) of the eight universities' purchases, with another $62 million (22%) spent for "other" unspecified items. Except for equipment, half of which is purchased out of state, expenditures in all these categories are overwhelmingly concentrated in metro Boston. Table 8 summarizes the objects of purchase and the localities where purchases were reported to have been made in 1972.[1]

Some of the data displayed in Table 8 (purchases in 1972) merit special attention:

1. 78% of supplies, amounting to $42 million, came from metro Boston.

2. Equipment purchases were much less likely to be local in origin, with 57% being procured from outside the metro area, the bulk of this from out of state. Metro Boston's share amounted to about $23 million.

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[1]Neither purchasing records nor purchasing agents in most colleges and universities are reliable sources of information on the actual sources of the goods bought for operations and construction. Thus, even a "sampling" of transactions is not a sure way of finding "facts." University administrators are busy doing their jobs, not social research on the ultimate origins of what they are ordering or paying for. Typical metropolitan economic structures indicate that about half the items bought in a metropolitan area are likely to be produced (to a greater or lesser extent) in that area. The complex of materials, processing labor and equipment, and transportation, indicates an indeterminate solution for this problem. University records are thus not ideally suited to the extraction of this kind of information, and in some cases estimates were made on the basis of informed judgment by university and project personnel. Moreover, the place of purchase, as identified in primary records of the institution, may or may not be the location of the main "production" impact of the purchases.

3. Almost all job printing was locally purchased -- 91% from either Boston or the surrounding area.

4. 81% of maintenance purchases for day-to-day operations of the universities came from the local area -- amounting to some $13 million.

5. Although 91% of the travel expenditures are recorded as having been purchased locally, one can assume that, in fact, the bulk of this money was spent on travel outside the metro area.

6. Bookstore purchases and library acquisitions were largely (60%) made outside the state altogether. Slightly more than one-third (36%) were made in Boston and the surrounding localities.

7. Utility service purchases were almost entirely from local suppliers (99%) for a total of $27 million.

8. Food and food contract purchases were a sizeable portion (5.6%) of the universities' purchases; of the $16 million, 88% or $14 million was placed with suppliers in Boston or the surrounding towns.

9. The residual item of purchases not specified in other categories -- a total of $62 million in 1972 -- was also largely local. About 90% was spent in the local area, one-third in Boston, the rest in the surrounding municipalities.

10. Within the Commonwealth of Massachusetts, university purchases were heavily concentrated in Boston and other local areas of the SMSA. Only 4.7% of purchases are estimated to have been made in the state but outside the metro area.

Table 8

SUMMARY OF 1972 INSTITUTIONAL PURCHASES

Category of Purchases	Location (values in $000)					
	Boston	Other Metro	Other Mass.	Out of State	TOTAL	%TOTAL
Equipment	7,634	15,177	3,551	27,333	53,695	19.0
%	14.2	28.2	6.6	50.9	100.0	
Supplies	11,457	30,556	4,355	7,199	53,567	19.0
%	21.4	57.0	8.1	13.4	100.0	
Utilities	7,473	19,333	14	9	26,829	9.5
%	27.9	72.0	0.1	0.0	100.0	
Maintenance	6,288	7,716	620	2,606	17,230	6.1
%	36.5	44.8	3.6	15.1	100.0	
Food	5,596	8,440	143	1,658	15,837	5.6
%	35.3	53.3	0.9	10.5	100.0	
Travel	639	11,222	159	1,031	13,051	4.6
%	4.9	86.0	1.2	7.9	100.0	
Telephone & Communication	4,927	7,389	7	42	12,365	4.4
%	39.9	59.8	0.1	0.3	100.0	
Library Acquisitions	1,244	2,076	230	6,193	9,743	3.5
%	12.8	21.3	2.4	63.6	100.0	
Printing	5,814	2,227	138	613	8,792	3.1
%	66.1	25.3	1.6	7.0	100.0	
Bookstore	1,176	1,054	223	2,929	5,382	1.9
%	21.9	19.6	4.1	54.4	100.0	
Insurance	3,131	450	0	232	3,813	1.4
%	82.1	11.8	-	6.1	100.0	
Other	16,918	33,206	3,754	8,066	61,944	22.0
%	27.3	53.6	6.1	13.0	100.0	
TOTAL	72,297	138,846	13,194	57,911	282,248	100.0
% of TOTAL	25.6	49.2	4.7	20.5	100.0	

V

THE IMPACT OF UNIVERSITY CONSTRUCTION

SUMMARY: Since 1950, the eight major universities of this study have spent $647 million on construction and had a backlog of work not yet completed at the end of 1972 of about $75 million more. About 55% of the total already spent, or $356 million, has been spent in metro Boston. That percentage includes virtually all of the labor costs, and represents a major direct addition to the employment level within the area economy.

A. SINCE 1950, THE MAJOR UNIVERSITIES HAVE SPENT $647 MILLION ON BOSTON-AREA CONSTRUCTION.

From a base of postwar building programs and a physical plant at that time of roughly $100 million, the institutions in this study spent $70 million on construction in the 1950's. After Sputnik (1957), the rate of construction increased dramatically. In the 1960's, the eight universities spent $330 million on construction.

Between 1970 and the end of 1972, they added a further $246 million, with a backlog of work uncompleted at the end of the year of another $75 million or thereabouts. Excluding this backlog, the total for the 22 years has been $647 million -- a very large building program by New England standards.

B. UNIVERSITY CONSTRUCTION HAS A POWERFUL IMPACT ON THE LOCAL ECONOMY.

With minor exceptions, the cost of commercial-type construction of the kind that predominates in university building programs has long tended to be half labor and half materials or equipment. This old industry rule that buildings are half labor has persisted despite strenuous efforts to cut labor costs through various new approaches. While the construction industry has become much more efficient in its work over the years, it is still rather labor-intensive. A big building project therefore means many local jobs, especially in the lesser skills.

It is not accidental that job-creating programs in many areas emphasize construction of various kinds. Its high

labor content guarantees direct employment effects on the local scene. This suggests that the $330 million the universities spent on construction in the 1960's (a period of otherwise relative stability in construction in the metro Boston area) must have had a profound effect upon the local economy. Local employment in construction rose by about 20% in that period, whereas total employment rose by about 17%.

C. ABOUT 55% OF CONSTRUCTION OUTLAYS STAY IN THE METRO BOSTON ECONOMY.

Investigations of the local construction industry indicate that 55% of construction outlays are directed towards locally supplied services and materials:

1. Almost all labor costs of construction (half the cost of most projects) are a direct addition to the employment level in the local economy.

2. The "import" component of materials and equipment for local university construction is rather high: probably 90% of non-labor input is brought into the metro area. (Items such as installed scientific equipment, furniture, or art work are not considered here.)

D. POSTWAR CONSTRUCTION TO THE END OF 1972 HAS MEANT $356 MILLION IN WAGES AND LOCAL PURCHASES.

Since the major wave of postwar construction started in the 1950's, the eight universities of the Boston area have allocated an estimated 55% of their $647 million in construction outlays, in effect, to local job creation and local material purchases.

The university construction program contributes to the position of these institutions as one of the strongest forces for economic growth in the metro Boston area.

VI

UNIVERSITIES AND THE FINANCIAL COMMUNITY

SUMMARY: Since the building and operating of a major university requires a large amount of money, it is not surprising that the eight universities sponsoring this study have considerable weight in local money markets. Of the $2.1 billion in combined assets these universities hold, nearly $2 billion is in metro Boston. Their faculties, staffs, and students have local bank accounts totaling $224 million. These sums make the universities substantial suppliers of funds for other borrowers. In addition, the eight universities themselves are the borrowers of $130 million, half of their loans negotiated with Boston area agencies. Furthermore, the universities encourage an inflow of funds through the gifts of their benefactors -- a combined $515 million since the beginning of 1967, a substantial part of this from out of state.

A. UNIVERSITIES ARE SOURCES OF FUNDS WORTH NEARLY $2 BILLION IN THE METRO BOSTON COMMUNITY.

The eight major universities have combined assets in cash and marketable securities totaling $2.1 billion. Cash alone amounts to $29 million. Of the balance of liquid assets and marketable securities, $1.9 billion is in revenue-generating portfolio investments.

Part of this money represents short-term investments made in managing cash flows. The bulk is endowment investments resulting from past gifts from friends of the universities.

A pool of funds of such magnitude makes the universities, in some respects, financial institutions in their own right. They offer funds to other parties in the money market. They support the borrowers of the area. Some 83% of their liquid assets are in the metro Boston area, (mostly in the City), and 96% of their portfolio securities.

B. FACULTY AND STAFF HAVE $196 MILLION IN LOCAL BANKS.

Surveys of faculty and staff expenditure patterns carried out for this project indicate a total of $195.6 million in local bank accounts: $22.8 million in checking accounts and $172.8 in savings accounts. (These figures allow for responses indicating "non-ownership" of such accounts, and, since such data may be non-responses, the estimates are almost certainly low.)

The employees of the major schools thus have nearly seven times as much cash in the bank as their employers! This money is an important element in the area's banking industry. It represents money for borrowers of all kinds and one form of support for the regional economy.

C. STUDENTS HAVE BANK ACCOUNTS TOTALING $28 MILLION.

One would not expect the students of a university to be as highly capitalized as their elders on the payroll because most of them are not gainfully employed. Even so, the 70,000 students of the eight major universities have bank accounts estimated to total $28 million: $21.8 million in savings accounts and $6.2 million in checking accounts.[1]

Students, it seems, are a significant source of funds for the money market. It is not surprising that some banks like having campus branches.

D. UNIVERSITIES ARE ALSO LARGE BORROWERS: $130 MILLION.

While not all university borrowings represent demand for funds in the Boston money markets, it is significant that the combined borrowings of the eight institutions total $130 million. The distribution by type of borrowing is enumerated in Table 9.

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[1] This information was computed from surveys of student finances carried out at each school. Just over half of the respondents do not have bank accounts, according to student surveys. This may or may not be true. The computed estimate of $28 million may be on the low side.

Table 9

UNIVERSITY BORROWING

	Amount ($)
Average outstanding bank loans	$ 21,476,000
Bonds, mortgages, security issues	101,215,000
Other	7,404,000
	$ 130,095,000

The universities, as borrowers as well as lenders, are thus a potent force in Boston area money markets and important contributors to the earnings of private and institutional investors. According to university records, half of these loans were made in Boston itself, most of the rest outside the metro area altogether (particularly in New York).

E. FINANCIAL MANAGEMENT SERVICES TO THE UNIVERSITIES EXCEED $1 MILLION A YEAR.

Brokerage, counseling, and other fees in excess of $1 million a year are paid by the major universities, an estimated 55% of this ($605,000) to Boston firms.

F. GIFTS TO THE UNIVERSITIES ARE A SOURCE OF MONEY INFLOW TO METRO BOSTON.

In the six years since the beginning of 1967, the eight universities have received gifts totaling $515 million, a rate of $85 million per year on the average. Harvard and M.I.T. are the main beneficiaries, as might be expected from their history and size, and from the scope of their graduate and research programs. An undetermined but substantial fraction of this money comes from out of state.

VII

EXPENDITURES BY FACULTY AND STAFF

SUMMARY: The faculties and staffs of the eight universities sponsoring this study number 35,400, with combined salaries of $348.9 million in 1972. Ninety-two percent of these employees live within the metro Boston area, where they paid an estimated $27 million in local property taxes in 1972. Payroll deductions for Massachusetts state income tax came to $13 million. Of their disposable income of $239 million, the universities' employees spent $196 million (82%) in metro Boston, $118 million on food and housing. Their purchases of durable and non-durable goods (housing and transportation excluded) account for $1 of every $75 in metro Boston's retail trade.

A. FACULTY AND STAFF OF THE EIGHT MAJOR UNIVERSITIES SPEND 82% OF THEIR $239 MILLION DISPOSABLE INCOME WITHIN METRO BOSTON.

In sampling[1] the faculty and staff at the institutions, the project group found that all but 8% reside within the metro Boston area. Including personal and business travel, members of the university community spend an estimated 18%

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[1]The sample consisted of 4,487 replies to a questionnaire sent to members of the faculty and staff of the eight universities. It is a 12% sample. Data concerning the dollar amounts of expenditure were supplemented by university information on the location of employees. U.S. Department of Labor statistics on family expenditure patterns were used to allocate consumer expenditures to the main items in household budgets. In this analysis, intermediate family patterns were chosen ($12,819 income) which correspond closely to the institutional average in Boston. This method is judged to be more reliable than trying to elicit the information from employees through questionnaires without depth interviews. See U.S. Department of Labor, 3 Budgets for an Urban Family of Four Persons, 1971.

of their personal expenditures outside of the metropolitan area.

The aggregate income of the faculty and staff was $348.9 million in 1972. Of this, $110 million was deducted for state and federal taxes, employee contributions to annuities, and other payroll deductions, leaving $239 million in disposable income, $196 million spent in metro Boston.

B. FACULTY AND STAFF REPRESENT A $134 MILLION ANNUAL MARKET FOR CONSUMER DURABLES AND NON-DURABLES.

Of disposable faculty and staff income totaling $239 million in 1972, $134 million went for consumer durables and non-durables.[1] This inference is drawn from Table 10, as the balance of expenditure beyond housing and transportation (which represent 44% of the total).

In 1972, food and housing accommodation took up 60% of the middle-income family budget, representing a $118 million metro area market. Housing represented a $67 million portion of this total. Respondents to the surveys indicated that they spent 6.7% of their incomes on durable goods. The figure is not an unreasonable one -- but it is clouded by a question of how much went for purchase of motor vehicles.

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[1]The breakdown of durables vs. non-durables is not easy to compute precisely from the available data because the "housing" figures in the table include furnishings.

Table 10

EXPENDITURE PATTERNS OF FACULTY AND STAFF, 1972
($000)

	City of Boston	Other Metro Boston	Other Areas	TOTAL	%
Food	12,426	38,521	11,184	62,131	26
Housing	16,250	50,374	14,625	81,249	34
Transportation	4,779	14,816	4,301	23,896	10
Clothing & personal care	5,257	16,297	4,732	26,286	11
Medical care	2,868	8,889	2,581	14,338	6
Other family consumption	3,345	10,372	3,010	16,727	7
Other items	2,868	8,889	2,581	14,338	6
Disposable income	47,793	148,158	43,014	238,965	100
% in areas	20%	62%	18%		

C. UNIVERSITY PEOPLE SPEND $15 MILLION ON CHILDREN'S PRIVATE EDUCATION.

Sixteen percent of the children of university faculty and staff members attend private educational institutions. The average family outlay for these families was $2,665 in 1972, totaling $14.9 million.

D. PURCHASES BY UNIVERSITY EMPLOYEES ACCOUNT FOR $1 OUT OF EVERY $75 IN METRO BOSTON RETAIL SALES.

Excluding housing and transportation, university employees spent $110 million of their disposable income in 1972 in metro Boston. This amounted to 1.48% of the $7.4 billion reported for retail sales in the area.[1] This rela-

[1]Retail sales figures for the Boston SMSA were estimated from data in U.S. Bureau of the Census, Annual Retail Trade Report: 1971 (Washington, D.C. September 1972).

tive value has been observed in previous studies and represents a significant element in local commerce.

E. UNIVERSITY FACULTY AND STAFF PAY $27 MILLION IN LOCAL TAXES.

At least half of the universities' faculty and staff members own their own homes, according to the surveys conducted for this study. On these homes, they said they paid $23 million in property taxes in 1972 -- of which $20 million went to governments in the metro area. Some 17% of this latter sum was paid to the City of Boston, the remaining 83% to other metro municipalities.

Of the 35,000 employees, at least 15% reported living in rented quarters. If a monthly per capita rent of $200, annual rent of $2400, and property taxes at 20% of rents are assumed, then each renter would be indirectly paying $480 in taxes. The total for 15,000 tenants is $7.2 million, bringing the aggregate local tax payments to $27 million in 1972.

These tax estimates do not include state or federal income tax payments or the various other state and federal levies for fees, licenses, sales tax, restaurant/bar charges, etc. In 1972, the universities collected $13 million in state income taxes from faculty and staff. The Commonwealth of Massachusetts 3% sales tax on selected classes of items other than food and clothing yields several hundred thousands of dollars a year from university employees, and the state's 5.7% restaurant tax on meals and drinks adds further to state receipts.

VIII

EXPENDITURES BY STUDENTS

SUMMARY: Economic surveys of university communities invariably reveal that students spend most of their money in the immediate area of the campus. This is valid for the Boston area too: the 70,000 full-time students enrolled in its eight major universities reported spending nearly $156 million in 1972, 94% of it in the City of Boston and surrounding communities.[1] A majority of these students (60%) seem to come from outside the metro Boston area. If it is assumed that students are typically financed by their parents, this suggests a huge inflow of outside funds for student spending in metro Boston -- up to $93 million a year. When student spending money is added to other external sources of funds, for university operations, the total flowing into the area probably exceeds that generated by any other form of local economic activity.

A. STUDENTS OF THE EIGHT UNIVERSITIES SPEND $156 MILLION A YEAR, 94% IN METRO BOSTON.

In 1972, the 70,000 full-time students in the eight

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[1]Data on student spending patterns came from eight sample surveys carried out in each university, and from university records. The total sample numbered 6,228 usable returns. Input data were edited, weighted with participation rates in each institution, and projected from weekly and monthly to annual bases by multiplication factors of 30 and 8 respectively. Summer school activities were ignored insofar as they affect full-time students. Using Datatext and SPSS programs, computerized analyses enabled the project members to evaluate distribution and skewness and check against master records for representativeness. However, the survey was anonymous and confidential, not permitting any follow-up of non-respondents. Hence its degree of representativeness on some questions is greater than on others. Results were compared with those of similar studies and can be accepted as having tolerable confidence limits. Professor Ralph B. D'Agostino of Boston University helped with some of these problems of sampling.

major universities spent an estimated $155,631,000, almost all of it (94%) in either the City of Boston or the surrounding metro municipalities.[1] (See Table 11.)

According to students' own statements, a student typically spends about 70% of his money in the city where he studies, the other 30% in the surrounding towns. There are, of course, many crossovers: a student living in Cambridge to attend Harvard or MIT spends some of his money in Boston, while the Boston-based student may spend some of his across the river in Cambridge. The same applies to the other consituent area municipalities where institutions are located. In 1972, student spending totaled more than $61 million in Boston, more than $85 million in other metro communities. Merchants and landlords in campus areas are alert to the value of student business, hence the variety of establishments near campuses geared to student trade.

B. 41% OF STUDENT EXPENDITURE IS ON FOOD AND ACCOMMODATION: $64 MILLION A YEAR.

Students spend $64 million for food and rent annually. This estimate excludes dormitory meals for students resident at the universities. For "rents" it covers only the 46% of the student body who live in off-campus quarters of their own. The numbers are for only eight months of the year, not twelve, and exclude part-time student spending for these items. The totals are, therefore, certainly a conservative estimate.

A student typically spends most of his money in his immediate campus area. This is reflected in the relatively small figures for "other areas" in Table 11. The "rent" reporting of 6% spent in "other areas" probably overstates the amount expended beyond metro Boston.

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[1] On the student surveys, respondents could not be expected to estimate precisely where each item in their budget was spent. So a general question was asked them as to the proportion of their money spent in local areas, the city, and metro Boston. The application of these percentages is a necessary constraint on the reliability of the area distributions in the table. Comments on this appear in the text. The errors are to some extent compensating; in any event, they do not materially change the overall result.

Table 11

DISTRIBUTION OF STUDENT EXPENDITURES, 1972
($000)

Type of Expenditure	City of Boston	Metro Boston (excl. city)	Other Areas	+ Total Amount	%
Rent	13,252	18,456	1,952	33,660	21.6
Food	11,983	16,688	1,765	30,436	19.5
Durable Goods	9,301	12,954	1,370	23,625	15.2
Drink & Entertainment	6,985	9,728	1,030	17,743	11.4
Local Transportation	4,913	6,842	723	12,478	8.0
Travel	3,163	4,405	466	8,034	5.2
Clothing	2,985	4,158	440	7,583	4.9
Telephone	2,693	3,750	396	6,839	4.4
Personal & Medical	2,505	3,489	369	6,363	4.1
Other	3,492	4,863	515	8,870	5.7
Total	61,272	85,333	9,026	155,631	100.0
% by Area	39%	55%	6%	100%	

C. STUDENT EXPENDITURES FOR DRINKS, ENTERTAINMENT, DURABLE GOODS, AND TRAVEL TOTAL $47 MILLION A YEAR IN METRO BOSTON.

By adult standards, student outlays on drinks and entertainment seem to be relatively large in relation to food purchases, but the latter do not include dormitory meals. Durable goods are also a large (15%) component of students' annual expenditures.

Drinks and entertainment and durable goods, together, represent a local market of $39 million a year. This conclusion assumes that most actual expenditures correspond with the students' indications of where, in general, they spend their money. The "travel" component is 5% of the total, or another $8 million a year out of overall student expenditures while at school. It is highly likely that much more than 6% of it is spent outside of the Boston area, and to this extent the figures are somewhat overstated as far as local impact is concerned. Drinks, entertainment, durable goods, and travel accounted for $50 million in 1972, $47 million in metro Boston.

D. STUDENTS SPEND ABOUT $7 MILLION A YEAR ON TELEPHONES.

Surveys undertaken for this study indicate that students are important telephone customers. Nearly one dollar in every twenty they spend goes for telephone service.

The total student expenditure on telephones is computed from the surveys at $6.8 million in 1972. This is only a little less than the $7.5 million outlay for clothing (most of which is presumably brought from home and is not reflected in students' school expenditures).

E. STUDENTS SPEND ANOTHER $18 MILLION A YEAR IN METRO BOSTON ON LOCAL TRANSPORTATION AND PERSONAL AND MEDICAL EXPENSES.

Local transportation costs are a large item in student budgets -- 8% of the total, $12 million a year. This figure includes car operations, which partly account for its size.

Personal and medical expenses at 4% of budgets, a total of $6.4 million a year, seem to be relatively small by adult standards. This may indicate that parents pay these bills for their children, over and above their allowances for university. Also, health insurance plans have above-average coverage in the income groups whose offspring are likely to be in college.

F. STUDENT EXPENDITURES INCLUDE AN ANNUAL INFLOW OF ABOUT $93 MILLION INTO METRO BOSTON.

According to university records about high schools of origin and the responses of students to the sample surveys, about 60% of the students of the eight universities come from outside the metro area.

To the extent that students' residential origins imply their sources of funding while at the university, up to $93 million of the total of $156 million is coming from outside metro Boston.

IX

EXPENDITURES BY CAMPUS VISITORS

SUMMARY: That special class of "tourists" made up of visitors to university campuses has been largely neglected in day-to-day record-keeping and in economic surveys. Investigations conducted for this study indicate that three kinds of visitors to the eight universities -- parents, friends of students, academic and professional visitors -- spend nearly a million visitor days a year in the Boston area, not to mention the time spent by part-time university students from out of town. This influx of visitors to campuses accounts for expenditures of at least $15.5 million a year for food, local accommodation, local transportation, and other purchases.

A. EXPENDITURES BY VISITORS TO BOSTON UNIVERSITIES PROBABLY EXCEED $15.5 MILLION PER YEAR.

Comparisons of detailed studies[1] of university visitor expenditures by Boston University, M.I.T., and Tufts University, together with related indicators from the other participating institutions, indicate that a minimum estimate of annual visitor expenditures would be $15.5 million.

The calculation of visitor expenditures is difficult, not because it is so hard to find out what individual visitors spend, but because the number and duration of visits is not usually recorded by colleges and universities. Students receive visits from their parents and from their friends, coming from various distances and staying for varying lengths of time. Professional and business visitors

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[1]Methodological contributions to, and direct support for, the visitors surveys were made by Carl Nelson of the Boston University College of Business Administration and by Brooks Paine, a member of Dr. Nelson's graduate seminar.

come and go, the details of their visits largely unrecorded. This study confines itself to consideration of four classes of visitors -- parents, friends of students, professional and academic visitors, and part-time students from out of town. Their probable expenditures are enumerated in Table 12.

Specifically excluded from this analysis is any consideration of visitors to the campuses who stay to become migrants to the academic community, either within the universities or in businesses surrounding the universities. Also excluded are visitors (except for those in the four categories mentioned above) who come to attend sporting programs, cultural programs, and other university events, or to attend meetings or entertainments which, though not directly connected with the universities, are often located here because the desired audience or participant list lives in the area.

Table 12

EXPENDITURES BY CAMPUS VISITORS, 1972[1]
($ millions)

Parents	5.5
Friends	7.1
Academic/Professional	1.3
Part-time students	1.6
	15.5

B. PARENTS SPEND ABOUT $5.5 MILLION A YEAR WHILE VISITING STUDENTS AT METRO BOSTON UNIVERSITIES.

Surveys among students and parents conducted for this study indicate that 39% of students at the eight major universities were visited by their parents in 1972. Parents from

[1]This analysis is based in part on special surveys carried out by Boston-area university personnel. The results are consistent with those of a similar study at the University of Pittsburgh in 1972, carried out by the SDL Systems Research Group.

out of town (about 60% of students enrolled on a full-time basis come from outside metro Boston) visit, on the average, just over twice a year and stay about 2.8 days on each visit. In all, it is estimated that visits to students by parents during 1972 accounted for 183,000 visitor days in 30,000 visits, the vast majority from outside the metro area. (Visits from nearby parents are, of course, rarer and have little economic impact.)

Visiting parents' per diem expenditures range from $12 to $40+. The surveys clearly indicate that the typical expenditure rate for a party of parents from out of state is $78 a day for an average party of 2.4, or $33 per person. In-state parents traveling from points nearer Boston spend about $45 a day for the same size party, or $19 per person. Those coming to town just for the day typically spend $12 on purchases connected with their trips. Detailed surveys among students in the participating universities and their parents yield a weighted average per diem expenditure of almost exactly $30 for an out-of-town parent, which, multiplied by 183,000 visitor days, totals $5.5 million.[1] This is judged to be a reliable figure.

C. FRIENDS VISITING STUDENTS AT BOSTON UNIVERSITIES BRING IN $7.1 MILLION ANNUALLY.

Friends who come to visit students at Boston's eight major universities certainly spend, on the average, considerably less each day than visiting parents. But they come more often, and they stay much longer. Surveys conducted for this study indicate that 66% of the students were visited by friends in 1972 in visits lasting a day or more. The average number of such visits received during the year was five, the average length almost exactly three days.

No reliable figures on the per diem expenditures of students' friends or on the distance traveled in their visits to metro Boston are available. For this reason, the daily spending rate has been estimated conservatively at

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[1] If this computation is compared with the 1972 study carried out at the University of Pittsburg, a straight extrapolation to Boston on the basis of student enrollments would yield $6.1 million.

$10, about one-third the parental average. Since the visits, however, generate 710,000 visitor days, the total for even this conservative estimate comes to $7.1 million, 29% more money than parents spend on their visits.

D. VARIOUS ACADEMIC AND PROFESSIONAL VISITORS TO METRO BOSTON SPEND ANOTHER $1.3 MILLION ANNUALLY.

The academic community engages in considerable intellectual intercourse: faculty members and staff travel to attend meetings, to present papers, to take part in experiments, to apply for jobs, to recruit students, faculty, or staff for academic programs or jobs, to give guest lectures, or just to trade ideas with colleagues in other institutions. As Chapter V has mentioned, the travel expenditures for the eight major universities in metro Boston amounted to $13 million in 1972, 4.6% of total purchases.[1] Since Boston is especially prominent among university communities, one can assume that it receives more visits than most.

In the absence of good records of academic and professional visits to campuses, surveys conducted for this project related the number of academic and professional visits to the number of faculty members. The ratio of visits ranged from 1.8 to 3.8 per year per faculty member, with an average of just under 3. If these rates are applied to the faculty counts at participating universities, a total of 42,000 academic and professional visitor days emerges for 1972. Since some of these visitors were compensated and since some certainly did not stay overnight, it is estimated that each spent $30 a day for a total of $1.3 million, probably an underestimate.

E. PART-TIME STUDENTS SPEND $1.6 MILLION PER YEAR IN COMING FROM OUTSIDE THE LOCAL AREA TO UNIVERSITY.

Part-time students play an important role in Boston's educational institutions: they constitute 27% of total

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[1]Examination of the research in the University of Pittsburgh economic impact study reveals that almost precisely the same proportion of total university purchases was represented by travel expenditures.

head count in student registrations. The economic effects of these students, however, are smaller than those of their full-time confreres. They may not go to school as long at any one session or come back as faithfully to continue. And many of them live in Boston or its surrounding communities and commute short distances from their homes or jobs to class. Typically, part-time students are older and already employed in the area, either full-time or part-time.

Interviews with part-time students in Boston indicated that those coming from outside the metro area (an estimated 25% of the 29,000 total) spend an average of $230 per year on a combination of recurring and incidental expenses -- the latter reflecting an inclination to do some shopping while downtown. These visitors (numbering just over 7,000 and spending an average of $230 per year) add $1.6 million a year to the local economy.

F. THE UNIVERSITIES' CULTURAL AND SPORTING EVENTS DRAW ADDITIONAL MONEY TO METRO BOSTON.

Besides parents, friends, academic and professional visitors, and part-time students from out of town, the universities of metro Boston are hosts to additional visitors who arrive for football games and other sporting events, for concerts, plays, exhibits, and other cultural events. Alumni of the universities are an important segment of this class of visitor, for reunions, convocations and other events of special interest to graduates. The amount these cultural and sporting visitors and alumni spend is likely to total in the range of from $8 million to $12 million annually. Since this cannot be substantiated, however, the inflow from such visits has not been included in the total inflow for visitors' expenditures.

X

TAX EXEMPTIONS AND OFFSETS

SUMMARY: Under the laws of the Commonwealth of Massachusetts, the educational properties of universities and colleges are exempt from local property taxes. This represents an undetermined dollar loss to local municipalities in tax receipts, though a small loss compared with that stemming from the much more extensive government-owned tax-exempt properties. The universities sponsoring this study may be viewed as offsetting some of the municipal services they receive by their own provision of municipal-type services, their community services, and, in some cases, payments to local governments in lieu of taxes. Although local governments may incur net dollar losses because of the presence of educational institutions within their jurisdiction, those same universities provide large hidden financial benefits to the Commonwealth as a whole and to its taxpayers.[1]

A. COLLEGES AND UNIVERSITIES ARE NOT TAXABLE UNDER CURRENT MASSACHUSETTS LAWS.

Using its general constitutional authority, the Massachusetts General Court has granted property tax exemptions to educational institutions "to cherish the interest of literature and the sciences and all seminaries of them." Harvard has the distinction of being specifically cited, having been founded in 1636, two hundred years before the tax acts formalizing exemptions for it and other similar institutions in 1836.

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[1]Material for this section was provided in part by the participating universities. Other sources include Edward H. Dlott's study, Institutional Property Tax Exemptions (Massachusetts Taxpayers Foundation, Inc., 1971) and reports of the Boston Municipal Research Bureau.

Even though they are not obliged to do so, tax-exempt educational institutions may pay sums in lieu of taxes to hard-pressed municipal governments. The Commonwealth compensates cities and towns for the public educational institutions located within their jurisdictions. And private universities, of course, have always paid taxes on their properties that are not dedicated to their academic missions. No exemption has been promulgated in Massachusetts on such non-educational properties as universities may hold for investment and the earning of revenues. For these, the colleges and universities of metro Boston are taxed like other property owners, paying $4 million a year on their non-exempt property.

This report will not deal directly with the question of whether or not educational properties should be taxed. That question is bound up with many social and political issues that have little relationship to "economic impacts". Among these are the pros and cons of basic reform in the state/local tax structure.

B. REVENUE LOSSES THROUGH EXEMPTIONS ARE BOTH HYPOTHETICAL AND ELUSIVE.

Since colleges and universities are not legally liable for property taxes on their (non-revenue) educational facilities, any notions or measures of "revenue losses" are entirely hypothetical.

The problem of evaluating tax exemptions has been discussed at length by Edward Dlott in his study for the Massachusetts Taxpayers Foundation already referred to. Assessors, busy with their current tasks, can hardly be expected to spend time updating and revising exempt property assessments which mean nothing in current tax terms. There is also the valuation problem as such. How would one "value" a university campus? Its book value might be too low, and its market value really a figment of the imagination, since alternative uses for major university facilities are in most cases hard to visualize. There are other problems, too -- so many, in fact, that we reluctantly decided to abandon the effort to discuss the dollar value of tax exemptions in this report.

C. GOVERNMENT-OWNED PROPERTIES INCREASINGLY DOMINATE BOSTON EXEMPTIONS.

Government property accounts for 81% of tax-exempt land in Boston. If one uses property valuation figures, which may

or may not be currently realistic for tax-exempt properties, government property is responsible for 73% of property-tax revenue losses through exemptions in Boston. According to a Boston Municipal Research Bureau study on tax exemption:

> The disproportionate concentration of tax-exempt real estate in Boston has become an increasingly important consideration in the City's attempt to stabilize its tax rate. In 1972, 56% of the City's total property valuation and 42% of the City's land area were exempt from real estate taxes. Governmental bodies own most of the tax-exempt property in the City, accounting for 41% of the City's total property valuation and 34% of the City's land area. Only 15% of Boston's property valuation and 8% of the City's land area are held by non-governmental tax-exempt property. During the period 1960-1972 governmental tax-exempt land increased 15.9% -- mostly by the City itself and by the Commonwealth -- while non-governmental tax-exempt land decreased 6.5%. The most logical solution to the tax-exempt problem is for the State to spread the cost of exemptions over the Commonwealth. However, other alternatives are available which could be initiated by the City. The overall City's financial problems are not caused primarily by tax-exempt real estate, which is only a moderate contributing factor. The City's financial problems can only be fundamentally alleviated by comprehensive tax reform.[1]

How do tax exemptions affect the increasing burden of real estate taxes on the city's property owners? The Bureau noted (p. 2):

> Of concern in Boston is whether a high tax rate is caused by a large percentage of tax-exempt property. While there does exist a moderate relationship between these two factors, the responsibility for the rise in the tax rate lies primarily with the City's need to increasingly rely on the property tax to meet ever-increasing costs.

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[1] Boston Municipal Research Bureau, The Boston Property Tax III: Tax-Exempt Property -- Asset or Liability, Special Report No. 10, April 25, 1973, p. 4.

D. THE MAJOR UNIVERSITIES OCCUPY 1.4% OF THE METRO BOSTON LAND AREA.

Table 13

UNIVERSITY AREA IN METRO BOSTON, 1972

Table 13 outlines briefly the relationship between campus and municipal land area.

Locality	Municipal Area (Square Miles)	Area of the 8 Universities (Square Miles)	
Boston	45.40	0.90	(2.0%)
Other Metro	226.72	2.96	(1.3%)
TOTAL	272.12	3.86	(1.4%)

Although tax-exempt properties are reported to make up 42% of the area of the City, they are only to a minor extent (8%) made up of privately owned real estate. The 8 major universities of the city own 0.90 square miles of real property, which represents 2% of the total land area.

The amount of university-owned property in the surrounding SMSA outside the boundaries of the City itself is larger (2.96 square miles), but the proportion is smaller, amounting to only 1.3% of the land area.

E. THE COST OF MUNICIPAL SERVICES ATTRIBUTABLE TO THE PRESENCE OF THE UNIVERSITIES CANNOT BE READILY MEASURED.

A separate study of considerable sophistication would be required to measure the cost of municipal services attributable to the presence of the major universities in this study -- to say nothing of the costs implied by the presence of the other 57 schools of metro Boston.

While the universities provide certain municipal-type services for themselves -- which would otherwise have to be provided by the cities and towns where their campuses are located -- they also create a demand for these services which are then paid for by local taxpayers.

The institutions may require added fire or police protection services, maintenance of utilities such as sewerage and water systems, or road maintenance on or near their campuses. It is very difficult to apportion such costs on an objective, scientific basis.

Colleges and universities may also add indirectly to municipal costs: the cost of congestion, traffic control, police and fire protection, and public works expense occasioned by high-density student populations surrounding the campuses, additional public transportation that may be subsidized by the taxpayers, and so on. It is not entirely certain that the population of students -- or faculty and staff members -- pay their own way on such services through the taxes they pay directly and indirectly to their municipalities. In fact, it may be difficult to determine, ultimately, which levels of government incur the most costs and secure the greatest benefits from these populations. The flows of revenues and incidences on taxpayers are themselves relatively inscrutable. The benefit matrix between state and local expenditures is even more so.

In the field of municipal finance, the question of who benefits and who pays has long been a subject of study and concern. After diligent inquiry, we have found no methodology capable of sorting out these complex variables. Hence our decision to indicate in a "categorical" fashion the nature of the implied municipal charges (without trying to state them in annual dollar amounts).

F. UNIVERSITIES PROVIDE SERVICES TO THEIR COMMUNITIES THAT OFFSET TAX EXEMPTIONS.

The town/gown economic nexus can be looked at in several ways. The presence of the colleges and universities requires a total set of municipal (or state) services and related expenditures. If some of these services are supplied by the institutions for themselves, then to this extent such services "offset" the total that would otherwise be needed.

Another hypothesis is that the total local-service costs that can be imputed to the institutions is the estimated value of their tax exemptions, or the revenue that is lost to the municipality because of the existence of the schools on certain parcels of land. Such a hypothesis might or might not be true; if it were, the value of self-supplied municipal-type services could be considered an offset to the shadow tax bill of the higher education sector.

In addition to municipal-type services provided by the colleges and universities for themselves, other kinds of offsets take the form of community services rendered by the institutions and perhaps their faculty, staffs, and students. Community services may have a quite direct relation to education as such. They may be performed directly by members of the faculty and student body on either a voluntary or paid basis. It is impossible to differentiate the service elements into "voluntary" and "paid" components, because the methodological problem moves into the evaluation of volunteer efforts in the community in general.[1]

In calculating the value of community services, we have not included cultural events linked to the universities but not directly dependent on them for presentation (e.g. orchestral concerts). Nor have we tried to estimate the social value of the several medical complexes associated with Boston University, Harvard, and Tufts. While these are all worthy of study, they fall outside our terms of reference as "economic impact" has been defined.

More tangible direct offsets to the cost of municipal (and state) services -- municipal-type services provided by the schools for themselves, and their identifiable direct public services -- are thus neither exhaustive in concept nor susceptible of ready evaluation. Together, they amount to many millions of dollars per year.

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[1]If we were to consider the value of education per se, we could define more offsets. One benefit is the income-earning power correlated with higher educational achievement. Students profit from their university studies -- although the self-selection element cannot be ignored. Graduates' lifetime earnings alone increase by at least $200,000, on the average. That represents a tremendous addition to "human capital" in the metro Boston area, running to billions of dollars on a life-annuity computation. Such values can run into millions of dollars for individuals alone, in the professions. This in turn brings secondary benefits of many kinds, social as well as financial, to the community. For a recent analysis of such extended benefits of postsecondary education, see Stephen B. Withey, A Degree and What Else? Correlates and Consequences of a College Education, a report prepared for The Carnegie Commission on Higher Education, Berkeley, California, 1971.

1. Municipal-type Services

Municipal-type services provided by the major universities for themselves include portions of police and fire protection, road repairs, snow removal, lighting, and trash and garbage disposal. These services are provided in approximately equal measure in the City of Boston and in other communities of the SMSA.

2. Community Services

The approximate value of direct social services to the community by the major universities can be estimated but cannot be measured reliably in dollar terms. Aside from the data collection problem caused by highly decentralized service delivery systems in departments, divisions, etc., it is difficult to differentiate official programs under which university people are paid from the important volunteer work that frequently parallels or complements them. Here are selected examples of community services:

- Medical and dental clinics, health service programs (including public health), support for improved medical care for people in the lower income ranges, or in custodial/therapeutic institutions. These are mainly provided through Boston University, Harvard, and Tufts.
- Nursing, paramedical, and related social welfare services, including day care centers.
- Legal aid, legal research, and counseling or rehabilitation.
- Teaching, tutoring, and special education programs.
- Drama workshops and theater groups.
- Library and related services.
- Indirect support for the Boston Symphony Orchestra and other musical groups through faculty appointments.
- Leadership in environmental management training, river basin improvement.
- Community projects in reconstruction planning, housing and transportation system planning, public policy analysis.

In an attempt to increase aid to deserving students unable to afford to attend university, the major institutions have recently added to existing scholarship programs. The sizes of the awards vary according to the program and the university.

The eight institutions sponsoring this study channeled $88 million to students in scholarships, employment, and loans in 1972, as shown in Table 14.

Table 14

UNIVERSITY DISBURSEMENT OF STUDENT AID, 1972

Type of Aid	Amount ($)	% Total
Scholarships	49,127,000	55.5
Employment	15,811,000	17.9
Federal funds	8,813,000	10.0
Commonwealth funds	5,575,000	6.3
Universities' own funds	5,209,000	5.9
Work/study loans	3,915,000	4.4
	88,450,000	100.0

The entire $88 million should not be thought of as "community services" provided by the universities. Not all the students receiving such aid are from Boston-area families -- although the special Boston University and Northeastern city scholarship programs are specifically directed towards them. Moreover, a portion (16%) is from federal or state loan funds or guarantees of repayment to the lenders in case of the recipients' default. While this is a rather subjective judgment, we would assign about one-third ($30 million) to the category of university-funded services to local residents -- who might otherwise be helped in their education by local or other government bodies. The proportioning of this sum is based on the geographical origins of students. This might or might not be reasonably included in the list of "offsets" to the cost of municipal services (benefits of tax exemptions), depending on the reader's judgment.

While tax exemptions are becoming increasingly valuable to the universities, the universities are also raising their level of community services and support to local students. These actions help the municipalities, both directly and indirectly.

G. THE COMMONWEALTH OF MASSACHUSETTS DERIVES FINANCIAL BENEFIT FROM THE UNIVERSITIES OF METRO BOSTON.

The preceding paragraphs have suggested various ways in which the major universities of metro Boston offset the value of property taxes lost to local communities through various municipal-type and community services. The tax exempt status of educational property, however, has been granted by the Commonwealth; but as state taxpayers, the citizens of the Commonwealth realize large but hidden benefits from the presence of private universities in the state, particularly from so dense a concentration as in the metro Boston area.

While it is extremely difficult, and perhaps impossible in a study of this scope, to quantify in detail the benefits that the Commonwealth derives directly and indirectly from the existence of the universities -- especially the private ones -- several kinds of benefits can be cited:

- State income taxes paid directly by faculty and staff.
- Sales taxes paid by faculty and staff plus sales taxes from student expenditures.
- The series of revenues generated by the construction and operating programs of the universities -- through their suppliers and, in turn, the employees of these suppliers.
- Contributions to the economic development of the Commonwealth, especially in the service industries and the inventive technology that comes from the institutions.
- The substantial educational expenditures that would have to be borne by the state's taxpayers if the bulk of the Boston-area educational establishment were mainly publicly financed.

XI

THE ECONOMIC IMPACT OF THE OTHER 57 METRO BOSTON COLLEGES AND UNIVERSITIES

In addition to the eight universities sponsoring this study, the Standard Metropolitan Statistical Area of Boston contains 57 other institutions of higher education.[1] They vary greatly in size, from a little over a hundred students to more than eight thousand.

With an overall full-time enrollment of 70,500 (excluding part-time students), the 57 other schools have aggregate annual operating expenditures of approximately $200 million. Their students are more likely to be local residents (73%) as compared with those of the major universities (44%). In general, their economic impact is about 30% of that of the eight universities.

Among the economic effects of those 57 institutions, the following are worthy of note here:

1. Faculty and staff totaling 5,000 earn $57 million in disposable income after taxes and other payroll deductions. If their expenditures follow the university members' pattern, about 80% of this money ($46 million) is spent in the metro area.

2. Institutional purchases total $35 million a year, 75% ($26 million) in Boston or other metro municipalities.

3. Student expenditures are not precisely known, but are probably in the neighborhood of $100 million a year, mostly in the metro area. About $37 million of this is spent by students coming here from out of town.

4. Although visitor surveys were not made at these schools, a conservative estimate would place annual visitor expenditure at $4.5 million (30% of the figure for the eight universities).

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[1] The estimates in this chapter are based on returns from 24 of the schools (42%). For the most part, enrollment data were used to estimate the aggregates for the larger group. Readers are reminded that all statistics refer to the 1972 "study year."

5. Student aid of various kinds totaled $15 million in 1972, 53% of it in the form of scholarships.

6. Municipal-type services and community services in these schools -- which may have been under-reported in our survey -- amounted to $470,000 in the study year. More than half of this money went for campus security.

7. Like other schools, these institutions undertook considerable building in the 1960's and have now reduced their rate of campus development. Even so, they are currently spending about $20 million a year on construction.

8. In financial terms, the institutions reported cash and portfolio investments of $161 million in 1972. In addition, they had liabilities in the form of bonds and mortgages totaling $53 million. They spent $500,000 on financial management services, mostly in the Boston area.

APPENDIX A

A HISTORY OF THE BOSTON EDUCATIONAL COMMUNITY

A HISTORY OF THE BOSTON EDUCATIONAL COMMUNITY[1]

A. BOSTON IS THE LEADING AMERICAN CENTER FOR HIGHER EDUCATION.

Beginning with the founding of Harvard College in 1636, the interactive influences of religion, economics, and culture have built the knowledge center at Boston to a position of national and international eminence: 65 colleges and universities in the official metro area. These institutions spend $1 billion a year, employ more than 41,000 people, and put up well over a hundred million dollars a year in construction.

But, of course, Boston's colleges and universities are much more than businesses. The early history of education in New England is largely a history of the greater Boston area. The interests of the colonists, the rising scientific-technological demands of the economy, and the original stimuli of religion all interacted to make the Bay State region an educational mecca. Nearly 7% of the population is students, nearly 10% of the labor force works in the education industry -- these are the largest ratios among all the metropolitan areas of the United States. The colleges and universities of Boston and its surrounding cities and towns are a primary factor in both intellectual and economic development in that area.

B. METRO BOSTON HAS THE HIGHEST RATIO OF STUDENT POPULATION (6.9%).

Regardless of one's choice of indicator, the metro Boston area is the knowledge center of the United States, and always has been. As matters now stand it probably always will be the nation's leading educational area because of the ways in which its growth is linked to religious, economic, and cultural conditions in the area.

In our study region, which is the Standard Metropolitan Statistical Area of Boston as officially defined for the U.S.

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[1]Research for this appendix was carried out by Bradley Ware, Harvard graduate and volunteer member of the task force.

Census, the 190,000 students of the area's 65 colleges and universities represented 6.9% of the population in 1970-71.[1]

To facilitate comparison with other metropolitan areas, we have used the Census definitions of both enrollment and population in Table 1 -- which clearly shows that Boston has the highest ratio of student population:

Table 1

COLLEGE ENROLLMENT AS PERCENT OF POPULATION IN MAJOR U.S. METROPOLITAN AREAS

	Area Population		College Enrollment	
SMSA	Rank	Number	Number	% Population
Boston	8	2,753,804	149,420	5.43
San Francisco	6	3,109,514	153,090	4.92
Los Angeles	2	7,032,075	308,285	4.38
Washington, DC	7	2,861,102	122,609	4.29
Minneapolis-St. Paul	15	1,813,647	77,315	4.26
New York	1	11,571,819	396,491	3.43
Pittsburgh	9	2,401,217	75,661	3.15
Chicago	3	6,974,423	215,960	3.10
Newark	14	1,856,554	56,965	3.07
Philadelphia	4	4,817,894	146,682	3.04
Baltimore	11	2,070,668	62,210	3.00
St. Louis	10	2,363,017	68,012	2.89
Detroit	5	4,199,923	116,726	2.78
Cleveland	12	2,064,192	54,848	2.66
Houston	13	1,984,940	52,228	2.63

[1] New England Board of Higher Education, FACTS 1972-1973 (Wellesley, 1972); U.S. Census Tracts, Table P-2: Social Characteristics of the Population: 1970 (for Boston and other Standard Metropolitan Statistical Areas). This enrollment figure, as published by the New England Board of Higher Education, is 27% larger than the 149,420 reported in the 1970 U.S. Census for the area's students enrolled for "regular schooling ... which may advance a person toward ... a college, university or professional degree". The Census figures are for full-time students; those of the New England Board of Higher Education include 40,000 part-time students.

C. MORE PEOPLE WORK IN EDUCATION (9.6%).

The role of educational institutions as employers in the Boston area also reflects the prominence of education in this part of New England. A greater portion of the labor force is devoted to "educational services"[1] in the area than in any of the other most populous U.S. urban areas:

Table 2

LABOR FORCE ENGAGED IN EDUCATIONAL SERVICES, 1970

SMSA	Population Rank	Employment	In Education	% Emp.
Boston	8	1,136,474	108,907	9.58
Washington, DC	7	1,178,990	102,381	8.68
Minne. St. Paul	15	759,606	63,111	8.31
San Francisco	6	1,267,643	102,124	8.06
Baltimore	11	810,545	60,766	7.50
Pittsburgh	9	870,902	64,622	7.42
New York	1	4,607,100	336,410	7.30
St. Louis	10	898,037	65,055	7.24
Philadelphia	4	1,878,497	133,433	7.10
Los Angeles	2	2,826,565	194,215	6.87
Newark	14	762,303	51,758	6.79
Detroit	5	1,570,953	104,921	6.68
Houston	13	797,421	52,637	6.60
Cleveland	12	828,585	54,484	6.58
Chicago	3	2,852,017	179,379	6.29

In economic terms, the Boston margin is a large one -- a 1% differential on this table is a participation rate more than 10% greater than the nearest city on the list, Washington. In gross numbers, the Boston labor force engaged in education is exceeded by only four other large aggregations in New York, Los Angeles, Chicago, and Philadelphia, all having larger populations.

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[1] "Educational services" includes employment in public and private elementary and secondary schools, colleges, universities, and related services. The table is from U.S. Census Tracts, Table P-3: Labor Force Characteristics of the Population: 1970 (for Boston and other SMSA's).

In the Boston area, education is an industry that, in terms of employment, exceeds each of the categories of construction, transportation, wholesale trade, health services, public administration, and finance, insurance and real estate. Education holds this strong position notwithstanding the recent trend in Boston toward the service industries and the particular prominence of the city's financial institutions as employers. Boston's situation emphasizes in very real terms the economic as well as the cultural value of the colleges and universities.

D. THE DEVELOPMENT OF THE BOSTON KNOWLEDGE CENTER HAS BEEN A SYMBIOTIC PROCESS.

From the founding of Harvard College in 1636 in Cambridge, and the beginnings of other institutions in the early 1800's, the higher education community in the Boston area has grown persistently. Schools have been founded because of the existence of other schools. Universities have helped change the nature of the society and in turn have been stimulated by these changes. Hence the notion of symbiosis to help explain interacting forces extending over more than 300 years. The process is still continuing. New influences are still coming to light. They will no doubt continue to do so. Boston is characterized by self-generating educational growth.

History gives some of the explanations for the Boston educational phenomenon. Samuel Eliot Morison ascribed three reasons for the founding of Harvard when fewer than four thousand colonists had settled around Massachusetts Bay: (1) a learned clergy and educated men to govern the colony, (2) trained leadership for the endemic confrontations with European and Indian power centers, and (3) a search for culture. "Comfort, decency and culture were as much a part of the Puritan scheme of things as Congregational churches and responsible government", Morison writes. "Common schools, compulsory education laws, grammar schools such as the Boston Latin, and the Cambridge printing press, belonged in the same category."[1]

E. RELIGIOUS, ECONOMIC, AND CULTURAL FACTORS HAVE INTERACTED.

Religious, economic, and cultural factors have inter-

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[1]Samuel Eliot Morison, Three Centuries of Harvard (Cambridge, Harvard University Press, 1965), p. 4.

acted over the centuries to stimulate the development of higher education in metropolitan Boston. While Harvard had an initial effect, it remained for 171 years the only college in Boston -- until the founding in 1807 of Andover Newton Theological School.

It was not until Boston's population exceeded 130,000 that a second liberal arts college was founded in the area. A study of the establishment of Tufts in 1852 provides a good insight into the dynamics of growth in Boston-area higher education. While non-sectarian, Tufts had its origins in the Unitarian Church and an 1847 meeting of Universalists in New York City. As a nineteenth century historian wrote, "the selection of the present site of the college cannot be regarded as other than fortunate ... because of its proximity to Boston, the most important literary center of the New World, where it may constantly feel the pulsations of every intellectual movement that takes place in the domain of thought..."[1]

While Tufts, like Harvard, was in part the product of religion, it was also a response to the growing cultural environment. This environment was to foster the establishment and growth of many institutions which, in turn, would contribute to the growth of an environment in which even more institutions would share, contribute, and grow.[2] This process is one manifestation of the collegiate multiplier effect.

The establishment of the Massachusetts Institute of Technology in 1861 marks the beginning of economic influences in their scientific and formal sense -- a complement to the predominantly "cultural" precedents of educational rationale. Evidence of this can be seen in the list of bodies that petitioned the legislature to approve the formation of an

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[1]George Gary Bush, History of Higher Education in Massachusetts (Washington, U.S. Government Printing Office, 1891), p. 287.

[2]A list of these institutions appears on pages 60 and 61 together with a historical list of graduate institutions established over the years by the major universities.

institute of technology:[1]

Boston Society of Natural History
Boston Board of Trade
American Academy of Arts and Sciences
Massachusetts Charitable Mechanics' Association
New England Society for the Promotion of Manufactures and the Mechanical Arts
New England State Teachers' Association

The support of the Boston Board of Trade, the Massachusetts Charitable Mechanics' Association, and the New England Society for the Promotion of Manufactures and the Mechanical Arts has historical significance and deserves further treatment.

The demand for scientific and engineering education was not accidental. The resource base in New England and the nineteenth century trends in sector development had an influence on education. Economist Robert W. Eisenmenger has described the resource-poor New England economy as "labor-intensive", requiring "... that a large amount of human effort be exerted on a small volume of raw materials to produce a high-value product".[2]

Manufacturing industries in such an economy emphasize "process" over bulk of product. They require advanced technology and highly trained personnel. M.I.T. was incorporated for "... aiding generally, by suitable means, the advancement, development, and practical application of science in connection with arts, agriculture, manufactures and commerc ".[3]

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[1]Bush, op. cit., p. 287.

[2]Robert W. Eisenmenger, The Dynamics of Growth in New England's Economy, 1870-1964 (Middletown, Conn., Wesleyan University Press, 1967), p. 6. Our analysis has benefited from the support of the First National Bank of Boston, and especially the comments of Vice President Dr. James M. Howell.

[3]Bush, op. cit., p. 288; from An Act to Incorporate the Massachusetts Institute of Technology.

As textile, shoe, leather, and apparel manufacturing declined in New England, technology-dependent industry grew along with the service industries of insurance, finance, medical care, and research and education. Such employment opportunities attracted educated people who gave their children the desire and money for higher education. Jobs would be available for them when they graduated. More liberal arts institutions such as Boston College and Boston University were founded. They in turn were complemented by the junior colleges and professional schools (see list of schools in order of their founding at the end of this Appendix).

The Commonwealth has a labor-intensive economy that not only offers employment to graduates of its schools but also -- by the same token -- supports the influx of educational institutions.

The three major dynamics of higher education growth -- religious origins, economic influence, and cultural interaction -- all work together in a mutually reinforcing way:

1. Religion

Schools with religious purposes or origins have continued to reflect population trends: Andover Newton Theological School, Boston College, Episcopal Theological School, Hebrew College, Hellenic College, Pope John XXIII National Seminary, and Regis College, to name a few. Brandeis University, while non-sectarian, was founded by the American Jewish community.

2. Economics

Beginning with M.I.T., many of the schools, colleges and universities have geared their programs in the practical arts to occupations and professions strongly represented in the local economy. Such programs include electronics, engineering, health care, medical technology, and business administration.

Conversely, the local economy has gathered strength from the skills, knowledge, and research of the universities. Indeed, the role of the university in stimulating the development of new industry and, particularly, of research-based enterprise is another enormously important aspect of the symbiotic relationship between the university and its community. The most familiar example is that of the spin-off company, which is created by the flow of people out of university laboratories into the entrepreneurial stream.

This phenomenon represents a very important, but little documented, economic impact. Boston area spin-offs include such firms as Digital Equipment Corporation (from Lincoln Laboratory), EG&G inc. (from an M.I.T. academic department), Wang Laboratories Inc. (from Harvard), and Itek Corporation (from Boston University). A great part of the famous Route 128 business area was created essentially by a series of spin-offs. Another example containing many elements is in the aerospace industries where much of the requisite technology was developed in the universities and led to industrial expansion in new directions.

3. Culture

Cultural influences were displayed in the origins of higher education. Such influences are inescapable and change with each generation. The high value placed on education in earlier days led to the establishment of Framingham State College (1839), Boston State College (1852), and Salem State College (1854). The same kind of influence has been manifested in the postwar development of junior colleges and more recently in the decision to create the new Boston campus of the University of Massachusetts.

Other cultural influences are demonstrated in such institutions as the Massachusetts College of Art, Berklee College of Music, Boston Conservatory of Music, the New England Conservatory of Music, and Emerson College.

Culture, of course, includes more than just the recorded cultural heritages that pass from one generation to the other in the mores, customs, and laws. It contains a strong element of engineering technology -- ways of enabling us humans to exert "leverage" on our problems. Social engineering is becoming almost as important as its scientific progenitor. The Boston knowledge center has felt influences of this kind. And it has contributed to them.

One manifestation has been in the form of interactions between academic disciplines and social styles. The phenomenon is still in its adventuresome embryonic stages. But it shows great promise. An example is the Route 128 developments. It and many of the so-called high-technology developments of the Boston area are in fact much more than just the innovative fruits of engineering science. They represent a long-standing but accelerated interaction between university traditions, entrepreneurship, and tax-encouraged financial resources -- all buttressed by the spirit of enterprise to make money through new modes of business. This symbiosis, which was enabled by the combination of academic initiative and federal funding of military and space research, has provoked considerable comment but not nearly

enough research. It is there, however, as a monument to accidental genius, and one of the less observable impacts of the Boston knowledge center. Not beyond the bounds of possibility are interactions of this type in the field of civil resource management and social service -- as the "university" grows beyond its walls to establish new interactions with its neighbors and constituencies near and far.

The cultural symbiosis has perhaps already grown beyond its former meaning, too. Cultural offerings of the community encourage the development of educational institutions, which in turn add to the cultural environment. New elements are being added even today. It is possible that students are being attracted to Boston and New England because of an area catering to leisure-time interests of an increasingly affluent society. Boston/Cambridge has become America's "biggest college town". In recent years, enrollment has grown with the increasing interest in new kinds and forms of education -- particularly those of a continuing or "lifetime" nature, of which Northeastern University is a primary manifestation.

* * *

Here we have tried to provide a perspective on the nature and causes of the educational wealth of Boston. The area has an economy that demands highly educated employees, thrives on technological research and development, and has the capacity to support dozens of educational institutions. The tendency of graduates and universities themselves to create off-shoot industries has resulted in a multiplier effect and the Route 128 development. The complementary nature of these processes is reflected in the growth of educational employment -- from 7.2% to 9.6% of the area's labor force since 1950, according to the U.S. Census.

THE BOSTON AREA'S HIGHER EDUCATIONAL CHRONOLOGY
1636-1970

1636 Harvard University

1807 Andover Newton Theological School
1823 Massachusetts College of Pharmacy
1839 Framingham State College

1851 Lasell Junior College
1852 Tufts University
1852 Boston State College
1854 Salem State College
1861 Massachusetts Institute of Technology
1863 Boston College
1867 Boston Conservatory of Music
1867 Episcopal Theological School
1867 New England Conservatory of Music
1869 Boston University
1872 Garland Junior College
1873 Massachusetts College of Art
1875 Wellesley College
1879 Curry College
1879 Radcliffe College
1880 Emerson College
1884 St. John's Seminary
1889 Gordon College
1889 Wheelock College
1892 Chamberlayne Junior College
1894 Massachusetts College of Optometry
1898 Northeastern University
1899 Mount Ida Junior College
1899 Simmons College

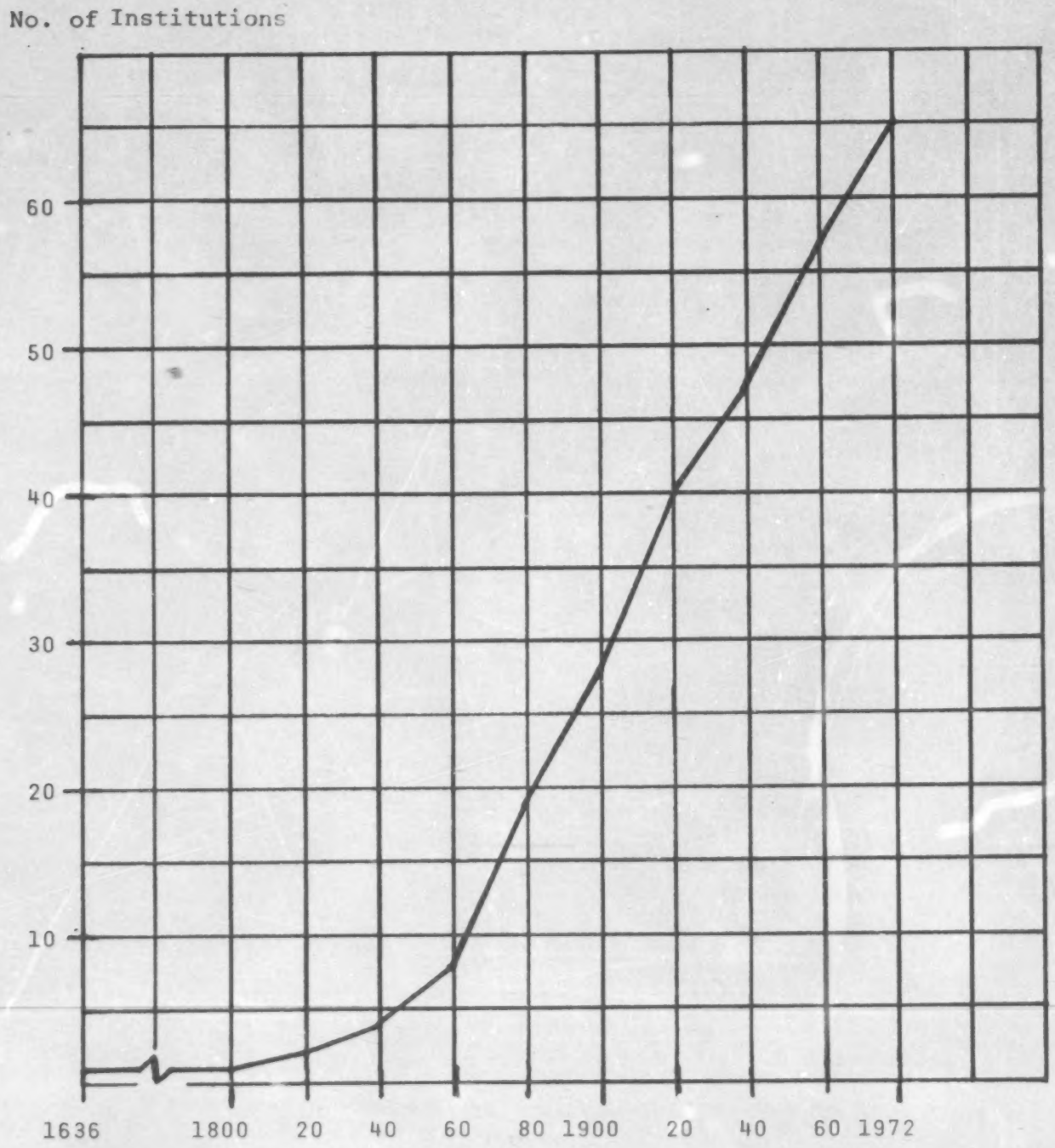
1903 Fisher Junior College
1904 Wentworth Institute
1906 Suffolk University
1907 New England Institute of Anatomy,
Sanitary Science and Embalming
1908 Franklin Institute of Boston
1908 New England School of Law
1909 Lesley College
1911 Pine Manor Junior College
1917 Bentley College
1918 Eastern Nazarene College
1919 Babson College
1919 Emmanuel College
1921 Hebrew College
1922 Weston College School of Theology

1922 Oblate College and Seminary
1927 Regis College for Women
1934 Cambridge Junior College
1937 Hellenic College
1939 Endicott Junior College
1945 Berklee College of Music
1946 Newton College of the Sacred Heart
1946 Newton Junior College
1948 Brandeis University
1948 Stonehill College

1950 Grahm Junior College
1951 Labouré Junior College
1956 Aquinas Junior College
1958 Quincy Junior College
1959 Mount Alvernia College
1961 Massachusetts Bay Community College
1962 Newbury Junior College
1963 University of Massachusetts Boston Campus
1964 Pope John XXIII National Seminary
1965 North Shore Community College
1966 Blue Hills Regional Technical Institute
1970 Middlesex Community College
1970 Wentworth College of Technology

Figure A.1

Growth of Higher Education in Greater Boston
Founding of Colleges and Universities 1636-1972



62.

THE HISTORY OF GRADUATE AND PROFESSIONAL EDUCATION
IN THE EIGHT MAJOR UNIVERSITIES
1782-1970

1782 Harvard Medical School

1816 Harvard Divinity School
1817 Harvard Law School
1867 Harvard Dental School
1867 Boston University School of Theology
1869 Tufts Crane Theological School
1872 Boston University School of Law
1872 Harvard Graduate School of Arts and Science
1873 Boston University School of Medicine
1874 Boston University Graduate School of Arts and Science
1885 Massachusetts Institute of Technology Graduate Programs
1892 Tufts Graduate School of Arts and Science
1893 Tufts School of Medicine
1898 Northeastern University School of Law
1899 Tufts School of Dental Medicine

1908 Harvard Graduate School of Business Administration
1913 Boston College College of Business Administration
1913 Boston University College of Business Administration
1920 Harvard Graduate School of Education
1922 Harvard School of Public Health
1923 Boston University School of Education
1925 Boston College Graduate School of Arts and Science
1927 Boston College School of Philosophy at Weston College
1929 Boston College Law School
1933 Tufts Fletcher School of Law and Diplomacy
1936 Harvard Graduate School of Design
1936 Boston College Graduate School of Social Work
1937 Harvard School of Government
1940 Boston University College of Music
1940 Boston University Graduate School of Social Work
1940 Northeastern University Graduate Division, Arts and Science
1946 Boston University School of Nursing
1947 Boston University School of Public Relations and Communications

1950 Northeastern University Graduate Division of Business Administration
1950 Northeastern University Graduate Division of Engineering
1953 Brandeis Graduate School of Arts and Science
1953 Northeastern University Graduate Division of Education
1954 Boston University School of Fine and Applied Arts
1957 Boston College School of Management

1958 Northeastern University Graduate School of Arts and Science
1959 Brandeis Florence Heller Graduate School for Advanced Studies in Social Welfare

1962 Northeastern Graduate School of Pharmaceutical Sciences
1963 Boston University College of Engineering
1963 Boston University School of Graduate Dentistry
1963 Northeastern University Graduate School of Actuarial Science
1965 Boston University Sargent College of Allied Health Professions
1965 Boston University Metropolitan College
1965 Northeastern University Graduate School of Professional Accounting

BOSTON COLLEGE

Newton, Massachusetts

History and Purposes

Founded in 1863, Boston College is one of the oldest Jesuit universities in the United States. Originally situated in Boston's South End to serve local young men, Boston College is today open to men and women of every background. Its scholarly pursuits span the entire spectrum of contemporary thought and interest. Most of its campus is in Newton, a suburban municipality in the western part of Metro Boston.

Enrollment

Current undergraduate enrollment totals about 8,000, of whom 1,000 are in the Evening College. In addition, some 3,000 students are doing graduate work in the graduate schools of arts and sciences, management, social work, and law. In 1972, more than 2,000 students attended regular sessions or special institutes in the Summer School.

Although Massachusetts students continue to predominate at Boston College (58%), the university draws part of its student body from all over the United States and from almost 40 foreign countries.

Faculty and Staff

The College faculty numbers 544 plus 36 full-time academic administrators.

Schools and Programs

In addition to graduate schools of Arts and Sciences (including Education and Nursing), Management, Social Work, and Law, Boston College consists of five undergraduate schools: Arts and Sciences, Management, Education, Nursing and the Evening College. A summer session offers a full range of undergraduate and graduate courses in major academic disciplines.

Alumni

Boston College has 51,448 living alumni, half of whom live in the Metro Boston area. The majority, about 34,000, are between 25 and 45 years old -- reflecting the growth of the university since World War II.

Governance

The Board of Trustees of Boston College has the sole legal authority and responsibility for the governance of the university. In the earlier years of the College, the ultimate authority rested in the governing body of the Society of Jesus. Now the 35 member board, representing a broad cross-section of the community, enjoys the same autonomy as do the trustees of other private institutions.

For more information

Write or call:

President J. Donald Monan, S.J.
Boston College
Chestnut Hill, Massachusetts 02167

617/969-0100

BOSTON UNIVERSITY

Boston, Massachusetts

History and Purpose

Boston University, established in 1869, is an independent non-sectarian institution offering undergraduate and graduate arts, science studies, and professional programs. Boston University is one of two major private educational institutions within the city of Boston itself. It is situated on a 48-acre campus along the south bank of the Charles River, with some its facilities such as the Medical School at the Medical Center in another part of the city.

Enrollment

Present enrollment is approximately 13,000 undergraduate and 4,000 graduate students. In addition, the university has a part-time student population of some 6,000. A relatively small proportion of the full-time student body comes from the Boston area, and about 25% from the Commonwealth of Massachusetts. The rest of the students are drawn from all the states of the Union and a number of foreign countries.

Faculty and Staff

Boston University has a full-time faculty of about 1,200 and a part-time faculty of about 1,000. In addition, the University has a staff of about 1,800 for administration and academic support.

Schools and Programs

In addition to the College of Liberal Arts and Graduate School, Boston University has the following specialized professional schools: Colleges of Business Administration and Engineering, the Schools of Education, Fine and Applied Arts, Law, Medicine, Nursing, Public Communication, Social Work, and Theology, and the Sargent College of Allied Health Professions.

Special academic units complement the main program structure -- the Medical Center (medical school, dental school, hospital), and centers for African, Afro-American, and Latin American Development Studies.

In Belgium, Italy, and West Germany, the university offers an Overseas Program to 800 students, primarily American military personnel. Four disciplines are included: business administration, education, engineering management, and industrial relations.

Research

The university has a $21 million annual research budget -- medical and allied health professions, graduate schools of arts and sciences, professional schools, and education.

Alumni

Boston University has one hundred thousand living alumni, half of them in New England, and thirty percent in the greater Boston area.

Governance

Boston University is governed by a president, three academic vice-presidents, three non-academic vice-presidents, a university council of the various college deans, a university senate composed of all members of the faculty. A senate council acts as the executive body of the faculty.

The university has a board of 42 trustees which meets quarterly to receive reports from the president and other officers, approve appointments, programs, and financial plans, such as investment policy, property changes, and budget expenditure levels.

For more information

Write or call:

President John R. Silber
Boston University
Boston, Massachusetts 02215

617/353-2200

BRANDEIS UNIVERSITY

Waltham, Massachusetts

History and Purpose

Now in its 25th year, Brandeis University is a co-educational liberal arts university and the first Jewish-sponsored non-sectarian institution of higher learning in the United States.

Enrollment

In 1972-73, Brandeis had 2,350 undergraduate students and 675 graduate students, with nearly equal numbers of men and women. In recent years, the number of foreign students has increased to about 200. Domestically, students come from 300 schools in more than 40 states. Approximately 70 percent of the student body lives on campus. About one-third of the undergraduates come from Massachusetts, about one-third from the New York metropolitan area, and one-third from the rest of the country and overseas.

Faculty and Staff

Largely focused on the liberal arts, the full-time faculty currently totals 335. The total staff of the University -- faculty and non-faculty -- numbers about 1400.

Programs

The College of Arts and Sciences offers a four-year undergraduate program leading to the Bachelor of Arts degree in the creative arts, humanities, science, and the social sciences. The Graduate School of Arts and Sciences offers programs of advanced studies in 21 fields.

The Florence Heller Graduate School for Advanced Studies in Social Welfare is the University's first professional school and is a major training ground for social welfare policy makers and teachers. Additionally, the University offers its students and those at other American schools a one-semester program of study in Israel through the Jacob Hiatt Institute.

Other programs and activities supplement the basic academic functions of the University. Musical, theatrical and arts programs on campus are open to residents of the Boston area.

Research

From its beginning, Brandeis University has committed an important part of its academic energy to programs of research and scholarly inquiry. Among the most recent developments in research at the University was the creation of the Rosenstiel Basic Medical Sciences Research Center, a major facility dedicated to research, teaching and coordinating medically-oriented work in the life sciences.

Alumni

Since 1948, Brandeis has graduated approximately 7,000 students. Of this group, 1,200 are teaching, mostly in colleges and universities; 600 are practicing attorneys; more than 500 are physicians; 600 are social workers; and about 100 are members of the clergy.

Governance

The chief executive officer is the president, who is responsible for all University academic and administrative activity, and for the execution of policy established by the Board of Trustees. The 40-member Board of Trustees (increased to 50 beginning in 1973-74) is the governing body of the Brandeis Corporation. The Board of Trustees includes three students, four faculty members, and the president of the National Alumni Association. Serving under the University president are five academic deans, and three non-academic vice-presidents. The faculty elects a Faculty Senate of 22 members to advise the administration and to recommend policies and programs.

For more information

Write or call:

Marver H. Bernstein, President
Brandeis University
Waltham, Massachusetts 02154

617/647-2201

HARVARD UNIVERSITY

Cambridge, Massachusetts

History and Purpose

Harvard University is a private, non-profit, non-sectarian institution founded in 1636. Its main campus is in Cambridge, with four of the graduate schools in Boston. Harvard College is the oldest college in the United States. Graduate education at Harvard began with the founding of the Harvard Medical School in 1782. At present, the University includes ten coeducational graduate schools which are the Medical School, Divinity School, Law School, Dental School, Business Administration, Education, Public Health, Design, Government and the Graduate School of Arts and Sciences.

Enrollment

Of the 15,000 full-time students at Harvard University, 60% are enrolled in the graduate schools. Approximately 20% of these are Boston area residents. Harvard offers part-time instruction in arts and sciences through the University's Extension and the Summer School. About 95% of the Extension students and 23% of the Summer School students are from the Boston area.

Faculty and Staff

The University employs 8,823 people on a full-time basis. Of that total 3,700, including full-time faculty, have appointments from the Harvard Corporation. The remaining employees are in charge of the administrative and staff functions of the University. In addition, an estimated 2,000 people work in faculty and staff positions on a part-time basis. Approximately 90% of all Harvard employees are residents of the Boston area.

Schools and Programs

Harvard College and Radcliffe College are the undergraduate components of Harvard University. Although Harvard College is not coeducational, Radcliffe forms the women's undergraduate branch of the University.

The University library collection now includes over eight million volumes, of which about 3 million are located at Widener Library in Harvard Yard. Other related institutions are: the Museum of Comparative Zoology, the Institute of Plant Sciences, the Arnold Arboretum, the Astronomical Observatory, the William Hayes Fogg Art Museum, the Peabody Museum of Archeology, the Busch-Reisinger Museum of Germanic Culture, the Semitic Museum, the Dumbarton Oaks Research Library and Collection, the Centers for Hellenic Studies, Italian Renaissance Studies and East Asian Studies.

Research

Research is conducted throughout the University and is supported by grants, gifts, and government income. The principal area of research is medical. In 1972, $45,662,000 was received for research from the U.S. Government and 48% of this money supported research in the Medical and Dental Schools, and the School of Public Health. The Department of Health, Education and Welfare, the National Science Foundation, the Atomic Energy Commission, and the National Aeronautics and Space Administration are the prime government sources for research conducted in the University.

Alumni

Harvard has 156,000 alumni including 52,000 graduates of Harvard College and 104,000 graduates of the 10 professional schools and Radcliffe College. Twenty-seven percent of the College alumni live in the Boston area.

Governance

Harvard University is governed by the Corporation and Board of Overseers. The Corporation consists of the President and Treasurer and five Fellows. The Board of Overseers consists of the President and Treasurer and 30 persons elected by the alumni for six-year terms. The consent of the Board is required for certain acts of the Corporation.

For more information

Write or call:

President Derek C. Bok
Harvard University
Cambridge, Massachusetts 02138

617/495-1000

MASSACHUSETTS INSTITUTE OF TECHNOLOGY

Cambridge, Massachusetts

History and Purpose

Chartered in 1861 as a Boston institute of science and industrial arts, M.I.T. moved across the Charles River to its present Cambridge home in 1916. Its founder, William Barton Rogers, had worked vigorously for many years to establish a new kind of school where young people "could learn exactly and thoroughly the fundamental principles of positive science, with their leading applications to the industrial arts."

The Massachusetts Institute of Technology is a privately endowed and financed institution with its campus extending more than a mile along the Cambridge side of the river.

Enrollment

The M.I.T. Community includes 4,100 undergraduates and 3,700 graduate students. Foreign students from 70 countries make up 18 percent of the student body. The Institute admits women, having presently about 460 of them as undergraduates and 360 as graduate students.

Campuses

In addition to its main campus in Cambridge, M.I.T. operates three research facilities in nearby towns: the Lincoln Laboratory in Lexington with substations in Westford, Tyngsboro, and Groton; the George R. Wallace, Jr., Astrophysical Observatory in Westford; and the 400 mev William H. Bates Linear Accelerator in Middleton, Massachusetts.

Faculty and Staff

Faculty members number 950, and supporting administrative, research and other staff on campus a further 2,200.

Schools and Programs

The Institute has broadened its curriculum and become quite well known in social sciences such as economics. The main emphasis continues to be on science and applied science such as engineering.

M.I.T. has a total of 24 academic departments organized into the schools of architecture and planning, engineering, humanities and social sciences, management, and science. These departments offer undergraduate and graduate instruction in some 40 fields. A growing number of these are of an interdisciplinary nature.

Supporting these programs is the M.I.T. library system of more than a million volumes, and a network of information processing services coordinated in the Information Processing Center.

Research

M.I.T. has grown into a major research center, with outside funding in the current year totalling $187 million. The main campus has a number of research centers and facilities, including: the Center for Advanced Visual Studies, the Center for Advanced Engineering Study, the Center for Space Research, the Research Laboratory of Electronics, the Center for Materials Science and Engineering, the Center for International Studies, the Operations Research Center, the Cancer Research Center, the Center for Life Sciences, the Center for Earth Sciences, the Center for Theoretical Physics, the Francis Bitter National Magnet Laboratory, the M.I.T. Nuclear Reactor, the High Voltage Research Laboratory, and Project MAC, a center for advanced computer research. In co-operation with Harvard University the Institute also operates the Joint Center for Urban Studies.

Alumni

Since its founding, M.I.T. has graduated more than 68,000 students. Recent expansion is reflected in the fact that 59,000 of these alumni are still alive and living in various parts of the world. About 9,000 now live in the greater Boston area.

Governance

The governing body of the Institute is a board of trustees known as the Corporation, over which the Chairman presides. Its members include 80 distinguished leaders of science, engineering, industry, and education and (ex officio) the President, the Chancellor, and the Treasurer of the Corporation.

The Institute's chief executive officer is the President. The Chancellor acts as a deputy to the President

on all matters. In addition, senior administrative officers of the Institute include the Provost, and eight Vice Presidents. The academic program is directed by the President, the Chancellor, the Provost, and five Deans, each responsible for the undergraduate and graduate programs in one of five academic Schools.

For more information

Write or call:

President Jerome B. Wiesner
Massachusetts Institute of Technology
Cambridge, Massachusetts 02130

617/253-1000

NORTHEASTERN UNIVERSITY

Boston, Massachusetts

History and Purpose

Northeastern University has pioneered in the development of both co-operative education and continuing education for adults. Beginning with evening courses in the YMCA in 1898, Northeastern went on to establish its first day college in 1909, and it has now become the largest private university in the United States in terms of total enrollment.

In co-operative education, the student attends classes on campus during alternate quarterly terms, and works off campus at a program-related job in between. While he is at school, another student takes over his work. Northeastern officials have helped many other institutions in the United States and abroad fashion such career-oriented programs.

Enrollment

Current enrollment is 37,000 college-credit students: 14,000 full-time undergraduates and 18,000 part-time. At the graduate level enrollment is 1,300 full-time and 4,000 part-time.

Campus

Much of the program of the University is offered at its city campus on Huntington Avenue in Boston. In addition, the University has its Suburban Campus in Burlington, a Center for Continuing Education in Weston, a Center for Physical Education and Recreation Education in Ashland, and a Marine Science Institute in Nahant. In the evenings, the Boston Campus and Suburban Campus are fully occupied by part-time students, and six other facilities in Greater Boston are used by the University during weekday evenings to serve part-time students at convenient locations.

Faculty and Staff

Northeastern employs 1,680 people on a full-time basis -- 670 faculty, 460 research, professional and administrative personnel, and 550 in support roles. A further 1,000 part-time

faculty are employed in Boston and at the other locations where evening programs are presented.

Schools and Programs

Since its early emphasis on engineering (which was the basis of the first co-op program), Northeastern has broadened its curriculum into liberal arts and the professional fields of business, education, pharmacy, and allied health professions, nursing, criminal justice, and recreation. The emphasis throughout has been on the many people in the local area whose families have not had many members attending university before. The co-operative program and the many offerings to students able to attend university only part-time have contributed to the general objective of the school to offer education in forms not duplicated by other institutions in Boston.

Originally Northeastern was strictly a local institution. As it has grown, it has attracted students from a wider area. But more than half of its full-time and almost all of its part-time students still come from the Boston area, 12% of them from the city itself. About one-third of the students receive financial aid. This is in addition to wages received directly from co-operative employers.

Northeastern's Center for Continuing Education conducts seminars on community problems and offers state-of-the-art courses for the engineers and scientists in Boston's research-oriented industries. Henderson House is a live-in conference center in Weston. In-service training programs have been organized to meet the needs of public service employees in both state and Boston departments.

In the past, the administration of co-operative education has been a unique feature of Northeastern; this service is now being made available to other colleges and universities throughout the country. The Institute for Off-Campus Experience and Co-operative Education has been created as a separate corporate entity which will purchase space and faculty time from Northeastern. Grants from the Braitmayer, Carnegie and Exxon Foundations are funding the start-up costs until the effort can become self-supporting with fees for its services.

Alumni

Living alumni of Northeastern University total 57,450. It is an impressive fact that 40,000 of these alumni live in the state of Massachusetts and that 22,000 reside in the Greater Boston area.

Governance

Northeastern's eight undergraduate colleges have considerable autonomy in conducting their academic programs. Their faculties also have general responsibility for the programs for part-time students offered by the University College and Lincoln College, as well as for graduate offerings. The Division of Co-operative Education serves all of the colleges and operates a center for research and consulting services for other institutions. On the graduate level there are eight graduate schools and a school of law. Overall academic policies are the responsibility of a faculty Senate with elected members from all colleges and schools.

At the university level, the president is responsible to the Board of Trustees.

For more information

Write or call:

President Asa S. Knowles
Northeastern University
Boston, Massachusetts 02115

617/437-2100

TUFTS UNIVERSITY

Medford, Massachusetts

History and Purpose

Named for Charles Tufts, donor of its campus in the northwest Boston suburb of Medford, Tufts University was first chartered as a college in 1852. Adding a new engineering school in 1865 and a divinity school in 1869, the university has grown into a diversified academic center including medical and dental schools. A longstanding tradition of excellence, liberalism, and educational variety focuses on sound instruction and personal achievement by each student.

Enrollment

Total university enrollment is now 5,312. Of this total, 80% are on the main campus in Medford. Two thousand of the 5,312 are graduate and professional students.

Campuses

The main Tufts campus consists of a hundred buildings on 150 acres of high land on the Medford-Somerville border near the Mystic River. On this campus are Tufts College (including liberal arts and engineering schools), Jackson College, the College of Special Studies, and the Fletcher School of Law and Diplomacy (founded in 1933 with a bequest by Austin B. Fletcher).

In downtown Boston, as the educational units of the Tufts-New England Medical Center, are the Tufts University Schools of Medicine and Dental Medicine. The Stearns Medical Research Building houses research facilities and also the Tufts University-Boston School of Occupational Therapy. In addition to the schools, the Center includes a complex of teaching hospitals.

Tufts programs are also offered overseas -- in London, Paris, Tubingen, and West Africa.

Faculty and Staff

The university employs about 1,800 full-time faculty

and 1,400 part-time faculty and staff.

Schools and Programs

The Medford campus concentrates on undergraduate education, with three-quarters of its students in this category. Of the schools and colleges cited earlier in this account, the Graduate School of Arts and Science and the Fletcher School are the main graduate instructional centers at Medford.

In addition to the more traditional programs, a number of innovative undergraduate programs have been introduced. One example is Plans of Study, which allow students to tailor their own areas of concentration. Others are the College Within, through which students work under senior faculty direction on comprehensive individualized projects, and the Experimental College's seminars in a variety of topics not included in the standard curriculum.

Research

Associated with Tufts University are a number of special educational facilities and research centers. Specialized libraries complement the central support facilities of the Nils Yngve Wessell Library, serving both instructional and research support functions.

The Medford campus houses the Lincoln Filene Center for Citizenship and Public Affairs. The Center sponsors educational research, engages in teacher and staff training, and develops instructional resources and media.

Within the College of Dental Medicine and the Tufts-New England Medical Center, research centers are devoted to advancing medical knowledge, such as cancer research and enzyme research.

Alumni

Of the 33,000 living Tufts alumni, 28% live in the Boston area. This group includes a wide variety of professionals. In fact, more than half of the dentists and about a third of the physicians in New England are Tufts professional school graduates.

Governance

The Trustees of Tufts College have the sole legal authority and responsibility for the governance of the university. This authority is all-inclusive, although faculty and students participate in policy determination to a considerable extent.

For more information

Write or call:

President Burton C. Hallowell
Tufts University
Medford, Massachusetts 02155

617/628-5000

UNIVERSITY OF MASSACHUSETTS AT BOSTON

Boston, Massachusetts

History and Purpose

The Boston campus was opened to students in 1965, under the impact of rising college enrollments on the part of Massachusetts students and the inability of the Commonwealth to meet this rising demand within then-present facilities. The university has made a commitment to provide residents of the Boston area, particularly those with low or moderate incomes, with a range and quality of educational opportunity equivalent to that available at Boston's private institutions -- and particularly to offer high-quality liberal arts and pre-professional education.

Enrollment

In September 1972, 5,662 students were enrolled at the Boston campus. Of those students, 36% were residents of the City of Boston, and 82% lived within a 15-mile radius of the city. The university's admissions policy has generated a highly diverse student body, somewhat older than average, with a rising minority group component, and more than 10% Armed Services veterans.

Faculty and Staff

In September 1972, the University of Massachusetts/ Boston employed 350 faculty, 100 professional and administrative personnel, and a support staff of 200 persons.

Schools and Programs

The initial Boston programs concentrated on the liberal arts, and have resulted in the establishment of two liberal arts colleges. A third college -- The College of Public and Community Service -- opened in the fall of 1973, emphasizes pre-professional programs in public administration and community service. Preliminary planning is underway for the development of a fourth college, also with career-oriented program structure. In this way, UMass/Boston aims at a diversity of academic options for its students.

Alumni

Since its founding in 1965, UMass/Boston has graduated approximately 3,200 students. Almost 80 percent of the UMass/Boston alumni are currently living in the Boston Metropolitan Area, and 94 percent live in the Commonwealth of Massachusetts.

Governance

UMass/Boston is one of the three campuses of the University of Massachusetts and is governed by a 25-member Board of Trustees. The Boston campus is operated under the same general structure as that governing the University of Massachusetts as a whole. Locally, the campus is directed by a Chancellor.

UMass/Boston was established by Chapter 75 of the General Laws of Massachusetts, Section 2, as amended. Its enabling legislation states that it is "to provide, without discrimination, education programs, research, extension and continuing education services in the liberal arts and sciences and in the professions, and in those professional areas normally requiring either education beyond four years of undergraduate training or a basic or advanced degree beyond the bachelor's level..."

For more information

Write or call

Dr. Carlo Golino
Chancellor
University of Massachusetts at Boston
Boston, Massachusetts 02116

617/287-1900

APPENDIX B

METHODOLOGY

METHODOLOGY

A. GENERAL APPROACH

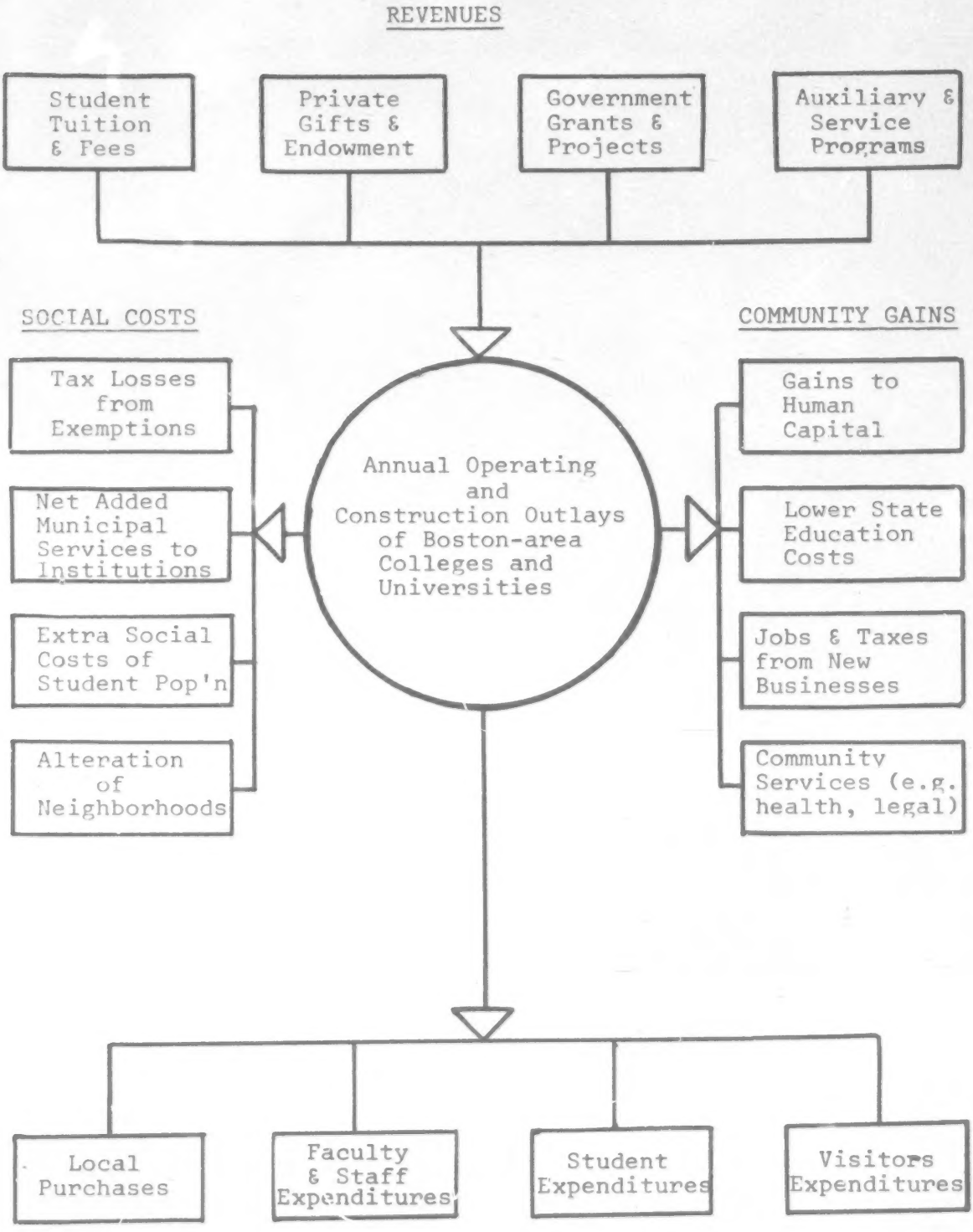
Although economic impact studies had been conducted before 1971, they received additional support and guidance through a report published by the American Council on Education in that year: John Caffrey and Herbert H. Isaacs, Estimating the Impact of a College or University on the Local Economy. We have followed the suggestions of this document, amended them in some ways, and profited from our experience in applying them at the University of Pittsburgh in the spring of 1972. We have also benefited from reading other economic impact studies.

The keynote of the approach is balance and objectivity. Under the Caffrey-Isaacs philosophy, the student is advised to deal with both positive and negative aspects of economic impact. As a result, he achieves greater credibility than might obtain if only the positive aspects of impact were discussed. This principle has been adhered to in this project. However, it is also true that many aspects of university impact have not been dealt with -- such as those regarding communication with neighbors, expansion plans that pre-empt property nearby, participation in community projects aligned with community (not university) goals, and so on. We have, on the other hand, tried to make a balanced account of the impacts on the community as these are manifested in cash flows.

Figure B.1 illustrates diagrammatically, the principal elements in the study's conceptual scheme. It does not reflect the varying quality of data used nor the important omissions from what is primarily a "cash flow" analysis. Among the university contributions to the community not fully explored in the broader social context are: (1) effects on local culture and the quality of life in Boston and elsewhere; (2) practical value of education to the students who receive it, in psychic and life-income terms; (3) impact of Boston research centers on man's knowledge of himself and his environments; (4) details on the impact of health science education and practice on local health care delivery; and (5) impact of knowledge-based industries on the New England economy. To get the highest quality data, university records have been searched diligently and many questions asked of faculty, staff and students. Still, surveys have to be interpreted. Judgment enters into statistics -- and is influenced by the results of similar studies done in other places on other schools. Confidence levels are, how-

Figure B.1

Main Economic Impact Study Components



ever, high enough to support the informational objectives of the project.

B. SOURCES OF DATA

The study used several sources of data:

1. University records.
2. University reports to public agencies, such as the U.S. Office of Education and local governments.
3. Civic records of assessment, taxes, and federal statistics on family expenditure, income, and retail sales.
4. Surveys of faculty, staff, students, and visitors designed and carried out specially for this project.
5. Opinions and judgments of project personnel and people in the community on measurement of variables not amenable to sampling or available from previous research.
6. Computer-based statistics from the First National Bank of Boston, plus the support of bank personnel in local economic documents.
7. Documents and assistance from the New England Board of Higher Education, especially its booklet, FACTS 1972-73.

C. DATA PROCESSING AND ANALYSIS

The data processing of the survey information was carried out at the Computing Center of Boston University, under the direction of Sylvia Fleisch -- who gave continual support in computational suggestions and interpretation of results. Datatext and SPSS were the packages used to array responses, compute arithmetic means, medians, and standard deviations.

Cut-off points were assigned to many of the responses in the staff and student surveys, but in fact made almost no difference in the final results. As in other surveys of this kind, when people were asked to estimate amounts of

money spent per period on various items, their multi-peaked distributions made interpretation more difficult than one would ideally like. In such cases, the consultants' judgment and the experience of other projects were applied to interpret the computations. One problem was, of course, to differentiate non-responses and zero responses in the process of weighting the sample results for estimation of the values of the universes. For example, if 50% of the students fail to respond to a question about their bank accounts, do we conclude that half of the student body do not have such accounts?

The survey policy was that all queries would be anonymous and confidential. This is, we feel, a necessary condition in projects of this type in the university community. Under such a survey rule, we could not follow up the non-respondents or check responses with the people who made them. However, there was a minimum of nonsense and frivolity, which in turn is partly a tribute to the interest that economic impact studies have for many people.

D. INCORPORATION OF OTHER INSTITUTIONS

Although the study was launched with the intent to cover only the eight major universities of the Greater Boston area, a decision was made later to include the smaller colleges and universities of the region. The study area, for this purpose as well as for the main effort, was as the Standard Metropolitan Statistical Area of Boston as defined by the U.S. Census. This is a rather peculiar urban area, not following county lines as such similar areas do in parts of the country where county lines are judged to be more relevant to socio-economic variances.

The other 57 colleges and universities of the area were invited to submit the general financial and student data to the central project group, and to contribute to the project in return for receiving progress and final reports. A substantial minority of the institutions cooperated. Their returns were extrapolated -- mainly by use of enrollment figures -- into estimates for the whole group.

E. THE IMPORTANCE OF COOPERATION

Many people worked together with the most gratifying harmony to produce this study. We have acknowledged some of these in the Preface and in notes in the text. This, however, is only part of the story.

The main element of cooperation in an economic impact

study is from the specific individuals possessing needed information: faculty and staff who reply to questionnaires; students who submit to interviews and tell about their expenditure patterns; parents of students who reply to questions about their visits; the part-time students who submit to sidewalk interviews; the officials in the institutions who work to gather university information for their representatives on the steering committee. All these ingredients are necessary. In this project they were brought together and reinforced by the efforts of all the members of the steering committee. They were dedicated to their task. They received strong support from their respective Presidents. The report is the product of this cooperative effort.